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Appendix D

FORCE HEALTH PROTECTION CAPABILITIES, RESTRICTIONS, AND CONSIDERATIONS

1. Background

FHP at installations may be provided by an MTF established in permanent structures (garrison-type organizations, ports, and airfields) or deployable FHP units. At CONUS locations, the primary source of FHP is the garrison organization with deployable FHP units assisting. At OCONUS locations, a combination of deployable units and garrison organizations serves as the primary FHP provider.

2. Preventive Medicine and Public Health Services

Preventive medicine (PVNTMED), public health services and other specialized teams, perform a variety of tasks in support of CBRN defense of installations. personnel perform a variety of tasks in support of CBRN defense of installations. In some cases, PVNTMED and public health services personnel may be requested to collect environmental samples for identification of CBRN contamination or risk assessment. In such cases, presumptive identification procedures are conducted by the collectors or by a designated laboratory. Chain of custody is established for the samples and the samples are forwarded by courier to the supporting laboratory. See *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear (CBRN) Reconnaissance, Multiservice Tactics, Techniques, and Procedures for Biological Surveillance*, FM 4-02.7, and FM 4-02.17 for detailed information. In cases where other groups/personnel are designated to obtain CBRN samples, PVNTMED/public health services personnel must be coordinated with it, in order to ensure that medical and OEH requirements are met. This includes involvements in final clearance level decision-making. The following describe key tasks that are direct medical and OEH responsibilities of PVNTMED/public health services.

a. Medical Surveillance. Medical surveillance is the ongoing daily systematic collection, analysis, and interpretation of data derived from instances of medical care or medical evaluation and the reporting of population-based information for characterizing and countering threats to a population's health, well being, and performance. Preattack/pre-event medical surveillance data collected provides a baseline for disease and nonbattle injury (DNBI) rates for the area. This baseline data provides essential information concerning which diseases are endemic to the area and the expected rates of illnesses. This can help medical personnel rule out endemic disease from diseases caused by an intentional BW event or determine whether increased rates of illness might be associated with chemical or radiological exposures. After an attack/event, or when a spike in illness above the baseline occurs, PVNTMED/public health services personnel must begin collecting data on: the numbers, signs, and symptoms of affected and unaffected persons; the possible source of the illness; and the movement of personnel. They analyze the data and prepare recommendations about how the commander can best reduce the effects of the attack/event and prevent new casualties. See DODD 6490.2 and DODI 6490.3 for medical surveillance requirements.

See JP 4-02 and FM 4-02.17 for detailed information regarding the conduct of medical surveillance activities.

b. Occupational and Environmental Health (OEH) Surveillance. OEH surveillance is the regular or repeated collection, analysis, archiving, interpretation, and dissemination of OEH-related data for monitoring the health of, or potential health hazard impact on, a population and individual personnel, and for intervening in a timely manner to prevent, treat, or control the occurrence of disease or injury, when necessary. Collection of OEH data on service members potentially exposed to CBRN agents/weapons is required for ensuring their continued care for post-exposure illnesses. Specifically, this includes documentation of the levels/durations of (unprotected) exposure to the specific CBRN hazard as well as any other existing hazards associated with are pollution or occupational exposures. Determination of baseline data regarding environmental pollution and unique occupational exposure should be coordinated through environmental or industrial hygiene personnel. If civilians are exposed to the agent/weapon at the site, similar documentation is necessary to ensure their medical needs are identified. See DODD 4715.1E, and DODI 6055.1 for OEH surveillance requirements and FM 4-02.17 for detailed information on the conduct of the OEH program. See DJSM-0612-03, Memorandum on Improving Occupational Health Surveillance (OEHS) Reporting and Archiving. Ensure that all significant action and associated items (response, documentation) are completed according to JCS Memo, MCM-0026-02 (Chemical Warfare Agent Exposure Planning Guidance) and JCS Memo, MCM-0006-02 (Documentation). Ensure that ASTM standards are met for environmental health surveillance assessments.

c. Casualty Prevention. Personnel whose primary duty involves responding in a CBRN environment should be issued the appropriate medical countermeasures. Issue of medical countermeasures should be consistent with theater policy. Based on the threat, nerve agent antidotes, blocking agents, vaccinations, and antibiotics can be provided to personnel. FM 4-02.7 provides additional information.

d. Water Surveillance. PVNTMED and public health services personnel conduct surveillance of water supplies on a continuous basis before, during, and after a CBRN event to ensure that the water is safe for consumption. Surveillance includes the source, treatment, and distribution system. If CBRN contamination is found, samples are collected, chain of custody is established, and the samples are forwarded by courier to the supporting laboratory. Analyses may include water and ice samples. The water production and treatment personnel are advised of the findings with recommendations on how to best render the supply safe for use. See FM 4-02.7 and FM 4-02.17 for additional information.

e. Food Service Surveillance. Food-service surveillance (during and after a CBRN event) is critical in ensuring that personnel have a safe food service facility and food source. The facility must be thoroughly inspected for possible contamination. Should contamination be found, veterinary personnel should be contacted for evaluation of the food supplies and determination of food safety. The facility must be closed and thoroughly decontaminated before proceeding to prepare and serve food to supported personnel. See FM 4-02.7, FM 4-02.17, and FM 4-02.18.

f. Waste Disposal (Liquid and Solid) Monitoring. PVNTMED and public health services personnel should ensure that wastes are properly collected, stored, and disposed of to mitigate potential exposures and safety hazards to military or civilian personnel. This may include making recommendations as to criteria for identifying hazardous waste, should a CBRN event occur (see FM 4-02.7 and FM 4-02.17 for additional information).

3. Laboratory Support

Laboratory support for processing specimens and samples may come from a variety of sources. Initial sample/specimen processing and presumptive identification will normally be performed by sample/specimen collection personnel and laboratory personnel near the incident site. The laboratory may be a DOD, local, regional, state, HN, or coalition force facility. The use of the test results from these facilities (especially HN and coalition force facilities) may be limited and they must be validated by a nationally recognized reference laboratory (e.g. USAMRIID, CDC, NMRC) for confirmatory identification and definitive characterization of the agent/material. The presumptive identification and/or field confirmatory identification by supporting laboratories provide leadership with valid information that can be used to initiate protective, preventive, and initial casualty care procedures. However, definitive identification and characterization may be required for forensic and retaliatory actions.

a. Clinical Laboratory. MTF personnel collect appropriate clinical specimens from affected and suspected personnel for laboratory testing. The organic clinical laboratory within Services' hospitals may be capable of performing presumptive identification or field confirmatory identification, if laboratory equipment is available (i.e., JBAIDS). Chain of custody is initiated by MTF personnel, and the specimens are referred to reference (confirmatory) laboratories for confirmatory testing. If required, reference laboratories will send isolates to LRN national laboratories for definitive (forensic) characterization. Clinical laboratories are not designed to be testing sites for environmental samples. Generally, public health laboratories are the preferred locations for environmental testing.

b. Laboratory Response Network (LRN). The LRN is a multilevel system, in CONUS and some OCONUS laboratories, that is designed to link front-line hospital and state public health microbiology labs with federal and military reference labs supporting advanced capabilities in testing human, veterinary, food, and environmental samples. Medical labs participating in the LRN employ common SOPs and reagents to process and identify potential BW threat agents. Upon obtaining a presumptive identification, clinical laboratories at community hospitals, referred to as LRN Sentinel labs, refer presumptively identified isolates to LRN reference laboratories for confirmatory identification. Upon confirmation of the identification at LRN reference labs, the samples/specimens may then be referred to LRN national laboratories for forensic testing and definitive characterization. The Food Emergency Response Network (FERN), which has a similar multilevel system as LRN, tests food and bottled water for CBRN threats.

c. Other Non-DOD Laboratories.

(1) CDC. The CDC is a nationally-recognized reference laboratory providing definitive identification of suspect biological agents. The CDC is available to support installation leadership with a broad-spectrum of laboratory support.

(2) HN. HN laboratory support may be provided through mutual agreements. However, the level of laboratory support may be limited and the laboratory personnel may not have up-to-date technology and training.

(3) Coalition Force. Presumptive identification of possible CBRN agents/material may be provided by coalition forces laboratory personnel. Again, their level of training and status of their equipment may be limited.

d. Other DOD Laboratories.

(1) USAMRICD. USAMRICD can provide laboratory support for the identification of chemical warfare (CW) agents from human specimens and technical guidance on prevention, protection, and medical management of CW agent injuries.

(2) AFRRI. AFRRI can provide technical and laboratory support for nuclear and radiological incidents or events. They can provide identification on the type of radiological hazard that exists and provide recommendations on shielding, hazard levels, and preventive measures. However, their laboratory support capabilities are very limited.

(3) Area Medical Laboratory (AML). The AML is a deployable USA medical laboratory that can provide presumptive and confirmatory identification of suspect CBRN agents/material. The AML has the capability to detect multiple biomarkers in a suspect sample/specimen; thus, providing positive identification of the agent. See FM 4-02.12 and FM 4-02.7 for more information.

(4) USAMRIID. USAMRIID is the DODs highest national reference laboratory for performing definitive identification of biological agents. USAMRIID can also provide technical guidance on prevention, protection, and medical management of BW agent injuries and infectious diseases.

(5) US Army Center for Health Promotion and Preventive Medicine (CHPPM). CHPPM can provide technical and laboratory support for TIC and provides health risk assessment SME for CW, TIC, biological and radiological hazards on behalf of the US Army Office of the Surgeon General. The website is http://www.chppm.com.

(6) Navy Environmental and Preventive Medicine Unit (NEPMU). The NEPMU and the Navy Disease Vector Ecology Control Center (NDVECC) are strategically located at installations around the world to meet FHP requirements and to perform confirmation identification of samples/specimens. Forward-Deployable Preventive Medicine Units (FDPMUs) have deployable teams with the capability of performing field confirmatory identification of samples/specimens.

(7) Navy Environmental Health Center (NEHC). The NEHC provides functional oversight of the laboratory services associated with field activities.

(8) NMRC. NMRC is a premier research organization that is one of DOD's nationally recognized reference laboratories that can provide definitive identification of biological agents. The Biological Defense Research Directorate (BDRD) of the NMRC serves as a national resource providing testing and analysis for the presence of anthrax and other potential biological hazards.

(9) USAF Institute for Occupational Health. USAF Institute for Occupational Health (radiochemistry laboratory) can provide definitive identification of radiological samples. The website for the radio-chemistry laboratory is: http://www.brooks.af.mil/afioh/Laboratories/sdrr_mission.htm

(10) USAF Bioenvironmental Engineer (BEE) Units. USAF bioenvironmental engineer units can provide field confirmatory identification of CBR agents.

(11) USAF Biological Augmentation Team (BAT). The BAT can provide commanders with field confirmatory identification with rapid, specific pathogen identification.

(12) Homeland Defense Laboratory Response Team (HLD-LRT). The USAF's HLD-LRT can provide rapid identification of potential biological agents. This resource is available at select USAF bases in CONUS and their equipment and protocols are similar to the BATs.

(13) The DOD food Analysis and Diagnostic Laboratory (FADL) and Veterinary Laboratory Europe. These laboratories have specific methodologies for testing food, bottled water, and commercially procured ice; they can provide technical and laboratory support in identification of pathogens, adulterants, and certain CBRN agents. The FADL can provide laboratory support in identification of animal/zoonotic diseases. These laboratories are accredited by the American Association for Laboratory Accreditation; the FADL is a member of the FERN laboratory network. The FERN website is http://vets.amedd.army.mil/vetlab.nsf.

4. Veterinary Medical Care

The US Army Veterinary Corps, under the direction of the Secretary of the Army and supervision of the Surgeon General of the Army, is the DOD executive agent for veterinary service for all the Services. Under CBRN conditions, veterinary service personnel will monitor food and bottled water for contamination (food safety and food security); provide veterinary PVNTMED; and provide veterinary medical care for government owned animals. For additional information regarding policies and capabilities, refer to MEDCOM REG 40-28 and MEDCOM PAM 40-13. On USAF bases, public health personnel perform food surveillance and bioenvironmental engineering personnel perform sampling for health risk assessment. In USN operations, PVNTMED, and other medical personnel may be required to perform food surveillance and sampling operations. See FM 4-02.7 and FM 4-02.18 for additional information.

a. Food Safety and Food Security. Whether in garrison or in a deployed environment, constant protection of food supplies is critical to the operation. Veterinary personnel monitor the food (including food-producing animals) for possible CBRN contamination and provide recommendations on how to best decontaminate it or if it must be destroyed. The operational commander has the ultimate responsibility for deciding if the food will be decontaminated or destroyed using risk assessments described in paragraph 3-10, FM 4-02.18.

b. Veterinary Medical Care. The CBRN environment may limit the level of care that can be provided for government owned animals. Veterinary personnel must locate an area outside the contaminated environment to provide essential care and decontamination. Veterinary personnel may also be called upon to provide care to privately owned pets and food-producing animals.

c. Veterinary PVNTMED. Veterinary personnel are responsible for performing investigations of unexplained animal deaths to include livestock and wildlife. They also monitor and evaluate safety of animals exposed to CBRN agents or TIM. Samples and specimens collected from animals will be forwarded to a supporting laboratory for testing; however, the veterinary unit may posses some organic testing capabilities for presumptive identification. In addition, the disposition of dead animals found on a military installation is an installation engineering directorate responsibility and is accomplished according to local policy and directives. Federal, state, and local health hazard standards, including environmental restrictions regarding the animal's disposal, will be the minimum standards.

5. Mass Casualty Management

Mass casualty (MASCAL) management requires greater numbers of medical treatment personnel to provide emergency care. A MASCAL situation exists when the number of patients requiring care exceeds the capabilities of available medical personnel or resources. In either situation the medical responders must make snap decisions on how to best manage the casualties to provide the best care for the greatest number. When the casualties do not have PPE, they must be removed from the contaminated area as quickly as possible. This must be balanced with a realization that failure to decontaminate the patient could potentially expand the area of contamination exponentially.

a. On-Scene Initial Treatment.

(1) Initial treatment for a MASCAL situation at the incident scene requires triage procedures be performed rapidly to determine if patients require emergency medical treatment before decontamination or if they can survive decontamination before receiving treatment. Patients should be medically stable before undergoing patient thorough decontamination; those not wearing MOPP ensemble may have a greater exposure to the agent and may require more medical attention. Medical care before decontamination might consist of emergency treatment to control hemorrhage or restore breathing, which could include the administration of antidotes (see FM 4-02.7, FM 4-02.33, FM 4-02.283, FM 8-284, FM 8-500, and ERG 2004 for detailed information on treatment procedures). All patients must be monitored and

provided care during the decontamination process to ensure that no further injury is caused by the decontamination process.

(2) The on-scene initial treatment for deployed forces or on a military installation is provided by the organic or supporting FHP personnel. On-scene initial treatment is usually provided by local, state, or federal medical responders at incidents off the installation. When an MOU is in place FHP personnel may provide the initial treatment for off installation incidents.

b. Patient Movement. Patient movement in a tactical situation is managed by the supporting FHP organizations. In a MASCAL situation involving civilian casualties, local civilian authorities normally manage patient movement operations. Patient movement on an installation is managed by EMS. See JP 4-02, FM 4-02.7, FM 8-10-6, FM 8-500, ERG 2004, and service/local command guidance for specific patient movement procedures.

6. Casualty Collection Points

Casualty collection points are established on the downwind side of the incident area and at the periphery of the warm zone. Medical personnel are located in these areas to begin triage and EMT to stabilize the patient for gross decontamination.

7. Medical Evacuation

One of the first considerations following a CBRN attack is to determine to what extent evacuation assets will be committed to contaminated areas. If personnel are to be sent into contaminated areas to evacuate casualties, some type of exposure guide must be established and followed. Every effort should be made to limit the number of assets and people that become contaminated, to include protecting medical personnel and evacuation crews from exposure to CBRN agents as much as possible.

a. Medical Evacuation. This is the process of moving patients from the point of injury to an MTF, or between two MTFs using vehicles, aircraft, or watercraft that are designed and staffed for this purpose. As a general rule, the unit will decontaminate casualties before they are presented to the MTF or entered into the aeromedical evacuation systems. Medical evacuation differs from casualty transportation in that en route care is provided during medical evacuation. See JP 4-02, FM 8-10.6, and FM 4-02.7 for detailed information.

b. Nonmedical Vehicles With En Route Care. When the number of patients exceeds the capabilities of supporting ambulances, nonmedical vehicles (e.g., flat bed trucks, school buses, public transit buses, helicopters, and private boats) may be employed for patient evacuation purposes. Medical personnel provide en route care to the patients. However, the level of care that can be provided may be limited due to the way patients are loaded onto the vehicle. See JP-4.02 and FM 8-10.6 for additional information.

c. Transportation Without En Route Care. When patient movement needs cannot be met with medical and nonmedical evacuation vehicles equipped with en route

care, patients may be transported on any vehicle of convenience. See FM 8-10.6 for additional information.

d. Preparation of the Patient for Evacuation. Preparation of the patient should include initial emergency treatment and decontamination/removal of gross contamination. In the battle area, those in MOPP should remain in their protective ensemble which can be grossly decontaminated (patient operational decontamination) before they are loaded on to "dirty" evacuation assets for movement to a facility that has adequate resources to perform a thorough decontamination. Previously decontaminated patients, who are no longer wearing MOPP, must be protected from contaminated patients through the use of a patient protective wrap (PPW). In a civilian setting gross decontamination assets may travel to the casualty collection point where patients will have clothing removed and skin decontaminated before being loaded onto evacuation vehicles. See FM 4-02.7 and *Multiservice Tactics, Techniques, and Procedures for CBRN Decontamination* for detailed information.

e. Preparation of the Medical Evacuation Vehicle. When contaminated patients are to be evacuated, the vehicle should be prepared for the mission. Preparation may include placement of plastic sheeting or blankets, under the litters to keep liquid and solid contamination off the inside of the vehicle. Also, the crew must be protected against the agent/material; they should be in the appropriate level of MOPP/EPA PPE.

NOTE: Potentially contaminated evacuation assets should be marked in a manner to indicate that they are dirty evacuation assets and the type of contamination they may contain (e.g., chemical, biological, radiological). These assets should only be used for incident response until decontaminated. See *Multiservice Tactics, Techniques, and Procedures for CBRN Decontamination* for additional information.

f. Aeromedical Evacuation. Externally contaminated patients and those infected with critical list agents will not be transported onboard AMC or AMC-procured aircraft without first being decontaminated. AMC/CC is the waiver authority to this policy. The transport of biologically contagious patients will need international clearances to fly over some countries.

8. Quarantine/Restriction of Movement

On an installation, restriction of movement procedures, including quarantine, may be necessary to prevent or reduce person-to-person transmission of communicable diseases following a BWA attack or a naturally occurring disease pandemic. The command surgeon or medical treatment facility commander/PHEO recommends these procedures. The installation commander directs their enforcement. The duration of such controls is determined by the period of time that personnel remain contagious. See DODD 6200.3, FM 4-02.33, and FM 8-284 for detailed information.

9. Patient and Medical Staff Protection

Essential to patient care is providing protection for patients and medical personnel from the effects of CBRN agents.

a. During the Evacuation. Patient protection during evacuation can be provided by use of the vehicle onboard collective protection (COLPRO) system, MOPP, the patient protective wrap, plastic sheeting, blankets, or other barrier material. Selecting routes that do not require movement through the downwind hazard area is also critical for crew and patient protection.

CAUTION

Do not place a contaminated patient into the Patient Protective Wrap (PPW) or other impermeable material. To do this will create a vapor seal which will increase absorption of the vapors through the contaminated patient's skin. The PPW is designed to be a protective overgarment for the thoroughly decontaminated patient who must be transported across a contaminated or potentially contaminated environment.

b. In the Hospital. Patient protection in fixed facilities without collective protection systems/equipment requires innovative procedures. Expedient patient protection may be provided by covering them with sheets, blankets, or plastic sheeting, and providing forced airflow over their face. The forced airflow can reduce the amount of chemical/biological agent that is inhaled.

c. Medical Staff PPE. The MOPP ensemble is the standard IPE provided to warfighters by theater combatant commanders in an operational environment. However, when non-military first response and recovery operations are involved, personnel must use federal OSHA levels of protection. When TIM are involved (especially TIC), personnel may require OSHA Level A, B or C protective ensembles or the use of National Institute for Occupational Safety and Health (NIOSH)-approved respirator with appropriate filter. See DODI 6055.1, *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection, Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Vulnerability Assessment*, FM 3-11.24, FM 4-02.7, FM 8-500, and ERG 2004 for descriptions of MOPP and OSHA protective equipment and requirements.

10. Combat and Operational Stress Control

Combat and operational stress control (COSC), also referred to as "mental health services," is critical in managing the stress concerns/conditions of service members and civilians that are affected by CBRN attacks/events (see FM 4-02.51).

a. In garrison, the primary care/response to COSC will be provided by organic MTF mental health personnel or mental health personnel in direct support of the MTF. When deployable COSC unit personnel are available, they may augment and support the MTF staff in the management of combat and operational stress reaction (COSR).

COSR conditions. The invisible, pervasive nature of these agents/weapons creates a high-degree of uncertainty and ambiguity presenting fertile opportunities for false alarms, mass panic and other maladaptive stress reactions. Therefore, medical personnel, commanders, and leaders must take actions to prevent and reduce the numbers of COSR cases in this environment. For detailed information on COSC see FM 4-02.7, FM 8-51, and FM 4-02-51.

11. Hospital Requirements

Installation based hospitals and deployable hospitals alike require early planning for preparation and receipt of CBRN patients. The patients may self-evacuate to the facility or may be evacuated to the facility before being decontaminated. Therefore, all hospitals in the vicinity of a CBRN event must be prepared to receive contaminated patients.

a. Contamination Control. Contamination control is critical to a successful medical response to a CBRN event. One patient contaminated with CB material could render the MTF unusable and contaminate the medical staff, thus disabling the medical staff from providing essential care to the victims of the incident. Key considerations include the following:

(1) Contamination should be removed from patients and medical items as close to the incident site as possible.

(2) Any individuals arriving at the hospital contaminated with a CBRN agent that were not decontaminated at the incident site must be decontaminated before admission into the medical facility (see paragraph 13.a.).

(3) The patient decontamination point(s) at an MTF should be clearly marked and operated with an established protocol to include addressing the use of detection equipment to verify decontamination and methods to control/collect decontamination water as appropriate (should be coordinated with local water treatment facility and environmental personnel).

(4) Lifesaving measures take priority over radiological decontamination, but in the case of less severe injuries, every effort should be made to decontaminate radiologically contaminated patients prior to entering the hospital. Concerns about the spread of radioactivity, (i.e., radioactive contamination or possible contamination of medical personnel) should be attended to after the patient has been stabilized.

b. Facility Security/Entry and Exit Control. Planning must include lock down procedures for the facility. Entry into the medical facility during and after a CBRN incident must be controlled by security personnel. If security personnel, not assigned to the hospital, will be used to provide hospital security, this should be noted in pre-event planning. Entry/exit should be limited to one or two doorways near patient hospital decontamination areas, with all other entrances secured and monitored. If the facility is collectively protected and COLPRO is activated, then these entry/exit areas

must be doors that have air locks and positive pressure to limit the entry of outside airborne contamination. See FM 4-02-7 for detailed entry/exit procedures.

c. Hospital Triage/Emergency Treatment Area (Decontamination Zone). The MTF should have medical personnel stationed between the evacuation vehicle arrival area and the hospital decontamination area. This hospital triage and emergency treatment area allows arriving patients to be re-triaged and provide medical stabilization while they await decontamination outside the hospital. Medical personnel in this area will determine which arriving patients have priority for decontamination at the designated hospital decontamination area.

d. Emergency Room Care. Emergency room personnel must be trained in procedures for providing emergency care to patients arriving from a CBRN event site. Patients may be suffering from the effects of the CBRN agent, conventional injuries, COSR, or a combination of these injuries/effects. Provision of care for these patients requires emergency room personnel to be trained in conventional injury care and treatment of CBRN effects. Emergency room personnel must also ensure that any patient or individual from the incident site are decontaminated prior to allowing their entry into the facility.

e. Inpatient Care. Inpatient care during and after a CBRN event requires not only care for their injuries/illnesses, but also protecting the patient from exposure to the CBRN effects. Patients in the fixed facility may be exposed due to the lack of COLPRO. When COLPRO is not available, wrapping a clean or decontaminated patient in blankets, sheets, etc and providing filtered fresh air to the face, mouth, and nose or administering oxygen through a face mask can greatly reduce the effects of many CB agents. The best protection is provided by COLPRO systems/equipment or individual PPE.

f. Infection Control. Infection control within the MTF is critical, especially when patients with contagious/infectious biological agent effects are admitted to the facility. Isolation/quarantine of affected patients is critical. The medical staff providing care to these patients should be limited in numbers and must apply standard, airborne, and contact precautions. See FM 4-02.33 and FM 8-284 for additional information.

12. Collective Protection

The provision of COLPRO in a fixed facility is possible. However, plans and improvements to the structure must begin long before any incident occurs to ensure survivability/protection of the hospital staff and patients.

a. Employment of the Chemically Protected Deployable Medical System (CPDEPMEDS) in a field environment is described in Mult*iservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* and FM 4-02.7. However, these systems may be employed in support of a response to a CBRN event at an installation. The CPDEPMEDS is classified as a deployable system, but the time required to establish/disestablish this system, makes it basically an installation. See TM-10-5410-283-14P for detailed information on this system.

b. Collectively Protected Expeditionary Medical Support (CPEMEDS) and Deployable Medical System (DEPMEDS) are joint programs to integrate environmentally controlled COLPRO into already fielded USA and USAF field hospitals in order to sustain medical operations in a CBRN contaminated environment for 72 hours. The M28 Simplified CPE has been integrated into the Army DEPMEDS and the Air Force EMEDS field hospitals.

c. The chemical biological protective shelter (CBPS) system is a deployable medical shelter system used by the battlefield medical treatment facilities and the forward surgical team. When available, they may be employed at an installation as a temporary shelter when the fixed facility becomes contaminated. However, the numbers of patients and staff that can occupy these systems are limited. When employed at the installation, only those patients who cannot be otherwise protected from the CBRN contamination should be placed inside these systems. See TM 10-5410-228-10 for detailed information and FM 4-02.7 for additional information on employment of these systems.

d. The M20 Simplified CBRN Collective Protection Equipment may be employed in rooms of opportunity or tents to provide COLPRO. However, this system only provides ambient temperature filtered ventilation. Newer versions of the M20 to include M20A1 are currently being fielded. See *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* and TM 3-4240-288-12&P for additional information.

13. Decontamination

a. Patient Decontamination. Decontamination of patients is critical to reduce the CBRN effects on them and to protect rescuers and medical personnel from cross contamination, or in the case of chemical agents from off gassing of vapors. Patients who were wearing protective garments when they were exposed to an agent may not need the extensive skin decontamination required for those who wore no protective equipment. When MOPP/IPE is worn, it is important to remove the overgarment carefully to reduce the spread of contaminant. In any case, clothing should be removed and the patient thoroughly decontaminated before he is allowed into a toxic-free MTF. For specific decontamination procedures see FM 4-02.7, FM 8-500, and ERG 2004. Consideration must be given to the placement of decontamination points to reduce the spread of contamination adjacent to fixed MTFs. Newly fielded decontamination equipment will require planning and training to be used effectively to decontaminate casualties. Principles presented in FM 3-11.5 remain valid for fixed-side patient decontamination and for newly fielded decontamination systems.

b. Facility Decontamination. Decontamination may require temporary closure of the MTF. Biological contamination may require labor-intensive decontamination procedures. Contamination with liquid or dry chemical agents will require decontamination of contaminated surfaces and sampling/analyses to ensure there are no residual toxic vapors. Areas contaminated only by vapors from patient clothing need only be well ventilated by fans to remove contaminated air from the area but would still need to be sampled to verify vapors have dissipated. Radiological contaminants, radioactive dust, should be carefully wiped up or removed with a high-

efficiency particulate air (HEPA) filter vacuum or other procedures which limit dust movement. The area can then be carefully checked with a detection device until no contamination is detected. The confidence with which an area is determined to be adequately decontaminated and "cleared" for reuse will be somewhat limited by reliance on real-time detectors. Real-time detectors include M8/M9 paper for surface liquid and several vapor detectors. The levels of detection are not necessarily no-effects levels. Unfortunately, the alternative, using laboratory analyses, would likely result in significant time delays. Therefore, facilities should include in their plans, specific identification of equipment to be used to verify decontamination/clear areas along with the explanation of the levels of detection offered by the equipment and the degree of protection offered by these levels. Plans should identify additional steps to be taken to verify clearance (e.g., follow-up laboratory analyses). This documentation will be critical for documentation of overall exposures to facility personnel and patients.

c. Medical Equipment Decontamination. Most medical equipment is not hardened or protected and cannot be decontaminated using standard decontaminants; therefore, replacement items must be available. Weathering may be used as a method for decontamination of medical equipment contaminated with liquid chemical agent only if no replacement is available and other decontamination methods would damage the equipment. Washing can be used if it does not damage the components, and the decontaminant used is not harmful to the material. Hypochlorite will corrode metal components. Equipment should be thoroughly disassembled during decontamination and should not be used inside a medical facility until it has been thoroughly disassembled and cleaned and its cleanliness can be verified with a detection device. (As indicated previously, however, the use of real-time equipment to verify adequate decontamination has significant limitations.) Medical supplies that are not packaged in metal or other impermeable containers and become contaminated must not be used in patient care. The outside of protected containers of medical supplies can be decontaminated and the contents can be used in patient care. See FM 4-02.7 for additional information.

d. Ambulance Decontamination. Decontamination of ambulances requires special considerations due to the fact that onboard medical equipment will most likely require replacing. Also, ambulances will be in such great demand that decontamination may have to be delayed until all patients have been evacuated. Operator decontamination should be performed to reduce the level of contamination in the patient transport area. See FM 4-02.7 and FM 8-10-6 for additional information.

14. Medical Logistics

Medical logistics (MEDLOG) personnel must be prepared to provide logistical support in preparation for and in response to a CBRN incident/event. Medical treatment personnel and MTFs may have a limited stock of pharmaceuticals, blood and blood expanders, medical equipment, and other Class VIII supplies on hand. However, resupply must be readily available for continuous response to the incident. The Army has CM sets positioned and maintained at strategic locations and are readily available within 24 to 48 hours after a CBRN incident. CM sets provide additional supplies to a CBRN incident to allow MTFs sufficient time to establish a resupply chain through the normal prime vendor system. Sources of supply and critical materiel to support a CBRN

incident must be identified in advance in order to expedite the resupply chain. For additional information on MEDLOG see JP 4-02.1 and FM 4-02.1.

a. Pharmaceuticals and Blood. Antidotes, pretreatments, therapeutics, barrier creams, blood and blood expanders must be available before a CBRN event occurs. Advance planning for critical materiel is a key element of MEDLOG preparedness. See JP 4-02 and FM 4-02.1 for detailed information on MEDLOG operations. See FM 4-02.33, FM 4-02.283, FM 8-284, and FM 8-500 for detailed information on essential pharmaceuticals.

b. Medical Equipment. Most medical equipment is not protected or hardened against CBRN contamination. MTF personnel and supporting units must be prepared to address contaminated or damaged equipment caused by a CBRN event. Alternative or noncontaminated equipment must be provided for use in patient decontamination and treatment operations.

c. Nonmedical Equipment. The nonmedical equipment that is required to provide a FHP response and patient care may include such items as garden hoses, shower heads mounted on pipe stands, disposable gowns, soap, wash cloths, household bleach, and bath towels for patient decontamination at the receiving MTF. High-test hypochlorite (HTH) or household bleach can be used to clean the patient equipment. See FM 4-02.7 and FM 8-500 for patient decontamination procedures. PPE for medical staffs must be provided including MOPP and/or EPA Levels A, B, C, and D ensembles, depending on the operational environment. Protective material such as tarpaulins and rolls of plastic material for covering supplies that cannot be stored inside containers or buildings may also be needed. The improvised air-lock frame is constructed of wood, pipes, or other similar material. The cover and outside door is constructed of the tarpaulin or plastic material and placed over the frame.

15. Incident Installation Medical Support

Organic medical personnel on the installation or designated medical personnel from another installation provide medical support at the incident site on the installation. The installation fire department or emergency medical services will normally provide medical evacuation from the incident site to the MTF. When on installation emergency medical services are not available, memorandums of agreement may be established with the off installation emergency medical services for provision of these services. Deployable medical evacuation assets may also be employed in patient evacuation.

16. Reach-Back

When local FHP capabilities cannot meet incident support requirements, reach-back organizations/agencies should be employed to fill the gaps. Reach-back support may be obtained from various sources. See FM 3-11.21, FM 3-11.4, and FM 8-42 for detailed information. Examples include the following:

a. DOD Organizations. DOD organizations include, but are not limited to, USAMRIID, USAMRICD, CHPPM, NMRC, or the AFRRI. See FM 4-02.7 for detailed information.

b. Other Federal Agencies. Federal agencies may include the CDC, FEMA, OSHA, DHS and EPA.

c. Local/State Organizations. Local/state civilian organizations may include law enforcement, public health, medical clinics, hospitals, fire departments, and emergency medical services.

d. Host Nation Support (HNS). HNS may include law enforcement, public health, medical clinics, hospitals, fire departments, and emergency services. However, their medical treatment standards and pharmaceuticals may not meet US standards. Therefore, memorandums of understanding/agreements should be developed to ensure that their medical support meets US standards.

17. Medical Planning Considerations.

There are multiple planning considerations to support operational planning. These considerations include—

- Receipt of contaminated self-evacuees.
- Recognition of biological outbreaks.
- Alternate treatment or isolation sites.
- Hospital evacuation.
- Training of patient care providers and nonmedical augmentees.
- Replacement of sick medical care providers.
- Ensure plan nesting with installation plan.
- Provision of a common operational picture.
- Logistical disruption.
- Facility security.
- Decontamination operations.
- Medical information/patient tracking.
- Integration with supporting medical facilities NDMS/MOV.
- Concept of operations for the entire installation AO.

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Appendix E

COLLECTIVE PROTECTION AND IN-PLACE PROTECTION

NOTE: For additional information on how to use and install COLPRO and SIP, see *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* and the *Unified Facilities Criteria.*

1. Collective Protection

a. COLPRO is protection provided for personnel to carry out functions without being restricted by protective clothing. JP 1-02 describes COLPRO as facilities or systems equipped with air filtration devices and air locks to provide personnel with a toxic-free environment for performing critical work and obtaining rest and relief in order to sustain combat operations. COLPRO is provided through a facility or the integral portion of equipment design, whereby individuals or groups may be afforded protection.

b. The term COLPRO applies to: buildings, facilities, or ships modified to afford protection; pieces of equipment (in their entirety or in part); or vehicles designed to provide CBR protection. COLPRO usage is characterized by the requirement of an individual or group to execute specific actions, such as donning or doffing equipment, entering a facility, or closing openings in order to derive the benefits of COLPRO.

c. COLPRO provides a safe environment for individuals to carry out tactical functions such as weapons employment, medical care, C2, and communications without being restricted by wearing the full set of CBRN protective clothing. MTTP for *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection*, provides a detailed discussion on COLPRO.

d. Ideally, COLPRO provides a temperature-controlled, contamination-free environment to allow personnel relief from continuous wear of PPE. The basic concept for most facility COLPRO solutions is to provide overpressure, filtration, and controlled entry and exit. Maintaining a higher internal air pressure than external pressure and filtering incoming air prevents contaminated external air from infiltrating the shelter. The result is a TFA where personnel can operate without protective equipment. One or more self-purging airlocks provide controlled entry and exit.

e. In addition to mission critical sustainment, COLPRO supports two mission sustainment areas that quickly erode in a CBR environment: personnel rest and relief (breaks and sleeping), and work relief (C2, medical treatment, MOPP recovery time after maximum work effort). Each installation must assess COLPRO requirements based upon the likely threats and mission requirements. Specific COLPRO solutions may include a mixture of permanent, mobile or transportable, or expedient or temporary COLPRO systems.

f. The provision of COLPRO in an installation is possible. However, plans and improvements to the structure must begin long before any incident occurs to ensure survivability/protection of the occupants. Representative COLPRO capabilities are identified below.

(1) Employment of the CPDEPMEDS in a field environment is described in *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Vulnerability Assessment* and FM 4-02.7. However, these systems may be employed in support of a response to a CBRN event at an installation. Though the CPDEPMEDS is classified as a Level III and Level IV deployable system, the time required to establish/disestablish this system associates this as an installation asset (see FM 4-02.7 and FM 4-02.10 for detailed information on this system).

(2) The CBPS system is a deployable medical shelter system used by the Level I and Level II MTFs and the forward surgical team. When available, they may be employed at an installation as a temporary shelter when the installation becomes contaminated. However, the numbers of patients and staff that can occupy these systems are limited. When employed at the installation, only those patients that cannot be otherwise protected from the CBRN contamination should be placed inside these systems. See FM 4-02.7 for additional information on employment of these systems.

(3) The M20 simplified CBRN COLPRO equipment may be employed in rooms of opportunity or tents to provide COLPRO. However, this system only provides ambient-temperature filtered ventilation (see *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* and TM 3-4240-288-12&P for additional information).

2. In-Place Protection

a. Use in-place protection, according to the guidelines in Table E-1 when evacuation may cause greater risk than remaining in place or when successful evacuation cannot be conducted.

b. In-place protection may not be the option of choice if the toxic vapors are flammable, the hazard is persistent, or buildings cannot be closed tightly. Although vehicles are not as effective as buildings, vehicles can offer some protection for a short period when the windows are closed and the ventilating system is shut off.

c. Warn personnel that are protected in place to stay clear of the windows due to the danger of glass and projectiles in the event of a fire or explosion. Maintain some form of communications with in-place protected personnel and advise them of changing conditions. Communications are a psychological lifeline for personnel cut off from freedom of movement and information.

d. Paragraph 3 provides detailed options for developing a form of an in-place protection program.

Table E-1. General Protection-In-Place Options

Protection-In-Place Options		
For This Function:	**Use These Items:**	**With This Guidance:**
Sealing Air Infiltration Points	• Plastic Canvas • Plastic Sheeting • CBRN-PC • Foam-In-Place • Gasket forming materials (silicon, rubber gaskets, foam sealing materials)	• Place plastic around inside of windows and doors. • Close holes and windows with plywood; seal using items shown and duct tape. • Spray foam into doorways and windows, overlapping all sills and openings. Foam spray will not work well on overhead horizontal surfaces. • Spray foam into all air intakes and exhausts. • Cut and fit plastic as necessary; use duct tape to hold in place. **CAUTION** Turn off HVAC systems before sealing air intakes/exhausts.
Individual Covers	• Plastic Sheet • Plastic Canvas • CBRN-PC • Military/Civilian Wet Weather Gear/Rain Suits (Rubber) • Ponchos • MCHT • TEMPER	• Cut plastic sheet, plastic canvas, and CBRN-PC 1.5 times taller and wider than the individual using it. Use as cover to provide protection-in-place for personnel caught in the open. • Make rain suits/ponchos part of daily work uniform, use in conjunction with plastic sheet, plastic canvas, and CBRNPC. • Pre-position MCHT and TEMPER throughout installation, concentrate on areas with few approved shelters, but high personnel concentrations.
Materiel Covers	• Plastic Sheeting • Plastic Coated Canvas • CBRN-PC • Large Area Shade Systems • Large Area Maintenance Shelter	• Cut and fit as necessary, use duct tape to hold in place. • Place covered material under shade systems or shelters for additional protection.
Shelters	• CONEX • MILVAN • MCPS • MGPTS	• Place CONEX/MILVAN at regular intervals around installations. Attach plastic sheet/CBRN-PC to front of CONEX/MILVAN of sufficient size to cover the opening and to act as a liquid barrier. Attach weight (piece of wood/iron bar, etc) to bottom edge of plastic to hold in place when being used. • Erect MCPS/MGPTS at specified intervals (based on personnel concentrations). • Use these measures in conjunction with individual and materiel covers.
Vertical Separation	• Plastic Sheeting • Plastic Coated Canvas • CBRN-PC	• Move operations to upper floor/levels. • Block entryways and openings with multiple sheets of plastic. Place a plastic sheet at foot of stairs, another partway up the stairs, a third at the top of the stairs, etc.
CAUTION The duration of protection using these measures is not quantified and is provided for emergency situations only. This table does not preclude using other expedient measures afforded by available materials and common sense.		

3. Shelter In Place

a. Using Shelter in Place (SIP). SIP is a means to providing low-cost, short-term protection against the effects of CBRN agent or the accidental or deliberate release of TIM. The purpose of SIP is to make a shelter out of the place you are in and protecting yourself until help arrives.

(1) SIP uses the indoor atmosphere to separate you from airborne hazards outside. Personnel are still potentially in the danger area, but are protected by the barrier created by the shelter. Speed is essential for SIP to work, the quicker actions are taken, the less likely airborne contaminants will enter.

(2) Protection diminishes over time. SIP is only for a short duration, roughly 2 hours or less. During wartime, this method is used to limit the entry of airborne contamination when other protection is unavailable. Under emergency conditions, it may provide limited protection to unprotected personnel or casualties that cannot wear the protective mask. A building can provide substantial protection if the air is filtered, temporarily interrupted, or reduced. Interrupting air flow is the principle used in SIP, and shutting down a building's HVAC and closing outside openings reduces the potential hazard. The concept assumes that the techniques can be applied rapidly, require little or no specialized training, and use common skills and supplies. Specific methods will vary based on the building or area to be protected and the ability to provide advanced warning to the occupants. Establishing SIP procedures for an installation requires planning and preparatory actions. The information provided in the following paragraphs outlines basic steps that can be used to support SIP planning. Key elements in the planning process include:

- Identifying space for SIP.
- Preparing and maintaining SIP kits.
- Establishing and practicing SIP procedures.
- Coordinating and assisting the training and exercising of SIP procedures.
- Determining the appropriate criteria to determine when SIP is necessary. This should be balanced with potential hazards associated with this COA (such as preventing access to medical and other potentially needed resources; exposure buildup of carbon dioxide and/or heat that cause headaches/mild illness or weakness—people in poorer health are especially vulnerable to these risks.

NOTE: the buildup of carbon dioxide can result in some mild effects such as headaches and weakness or fatigue. These effects are transient for short-term exposures, but monitoring of carbon dioxide levels is advisable to ensure serious life-threatening levels are not reached. Use of generators or propane heaters should be avoided inside shelters, as these can increase toxic levels.

(3) Identifying a building for use to support SIP will consider the following facility requirements. For example, the ideal building should be:Concrete.

- Multistory.

- Equipped with air handlers located on the roof.
- Energy efficient.
- In a remote location.
- On a hill.
- Upwind side of the base.
- Away from the installation perimeter.
- Equipped with an emergency power supply.
- Equipped with filtered air.

Further, the rooms identified for SIP should be on an upper floor; possess no windows, provide a communications capability, and be accessible during duty hours and at a central location.

b. Estimating SIP Requirements. Estimating space requirements involves factors such as, the number of personnel that require shelter, available square footage, and air requirements.

(1) Computing Square Footage for SIP. Determining the approximate square footage for SIP includes estimating the total floor space required, the estimated available air and air requirements. A representative computation for determining square footage for a SIP requirement is identified below.

- **Step 1.** Determining Floor Space.
  - Current guidance allows for 10 f^2 per person for SIP.
  - Determine the area (f^2) of a SIP room by multiplying the length (l) by the width (w). (l) (w) = f^2
- **Step 2.** Determining Air Available. Determine cubic feet (f3) of a SIP room by multiplying (l) by (w) by Height (h). (l) (w) (h) = f3
- **Step 3.** Determining Air Requirements.
  - A person generally requires 16.2 f3 of air per hour while at rest. 32.3 f3 to protect for minimum of 2 hours.
  - Double the amount to 64.6 f3 for planning purposes and safety concerns due to heat and humidity build up, activity level of people, and the cautions of using the minimum air requirements (64.6 f3).

NOTE: The buildup of carbon dioxide will cause some headaches. This is acceptable for a short duration.

NOTE: People with poor health may become casualties to the heat, carbon dioxide buildup, or from the tight quarters.

(2) Sample SIP Room Calculation.

- **Step 1.** Determine Floor Space.
  - Measurement Example: 20 x 20 x 7.5

- Area = 400 f2
- (Using floor space per person requirement of 10 f2)
- Divide 400 f^2 by 10 f^2 = 40 people have room for SIP

- **Step 2.** Determine Air Available. Cubic feet of air = 3,000 f3
- **Step 3.** Determine Air Requirements. Divide 3,000 f3 by: 64.6 f3 = 46 people have enough air for two hours. Use the lowest number of people from steps 1 and 2. This is your "maximum occupancy (i.e., 40 people have room for SIP)".
  - Walk through potential SIP rooms. Look at actual floor space available by taking into account furnishing such as cabinets, cubicles and desks and the mission.
  - Determine how many people can be realistically sheltered. This is your "planned occupancy".
    - SIP must be accomplished within minutes to be of use.
    - The larger the SIP room, the longer it will take to seal.
    - Saving lives has a higher priority than comfort.
    - Unrealistic cramping of personal space becomes an issue before problems with breathable air arise.

c. Establishing an SIP program. Setting up an installation SIP program will be an effort that should include installation and tenant unit personnel. Table E-2 provides a list of sample steps that should be considered for establishment of a SIP program.

Table E-2. Establishing an SIP Program

NOTE: The Facility Manager and the installation or tenant emergency management point of contact complete this as a joint effort.
Determine the maximum number of people for SIP planning. • Number of personnel assigned. • Additional personnel routinely in the area.
Identify potential SIP rooms. <u>Look for:</u> • Accessibility during duty hours. • Centrally located. • Handicapped accessible. • Communication. o Phone (minimum). o Computer with E-mail access. o Fax. o Cable TV. • Water and food available. <u>Avoid:</u> • Rooms facing major roads. • Rooms facing likely targets. • Rooms with many windows.
Calculate occupancy of SIP rooms. • Compare the planned occupancy to the maximum number requiring SIP protection. • Add rooms as needed.
Develop SIP plans for each SIP room. • Refer to "Sample SIP Procedures."
Brief the SIP proposal to the commander and obtain approval of— • Location of SIP rooms. • Procedures. • Resourcing for SIP supplies.
Gather items for the SIP kit (one for each SIP room) (sample listing). • SIP plan. • Plastic Sheeting (6 mil minimum). • Duct Tape (10 mil minimum). • Radio. • Flashlights. • Batteries. • Scissors. • Bath towels, if needed (one per door). • Water, if needed (1 gallon per towel). • First aid kit.
Put together a kit for each SIP room. • Precut the plastic sheeting to cover windows, doors, vents, etc. • Clearly identify and place the SIP kit inside each SIP room.
Post SIP information in common areas of the facility. Information should include— • Identify. o Facility manager. o POC. • Location of the closest SIP room. • Actions to take upon notification.

Table E-2. Establishing a SIP Program (continued)

Train personnel by providing an overview of SIP. **NOTE: This is a coordinated effort between the facility manager and the emergency management POC.** • What is SIP. • Why SIP. • Location of SIP rooms. • Actions to take upon notification. o Make sure everybody knows of the emergency . o Seal your office area and the building as you head toward your SIP room. Close windows, vents, and doors. Turn off heating and air conditioning systems. o Proceed to the nearest SIP room (assist those who need help). o Follow detailed instructions. • Actions to take once in the SIP room. • Warning and notification.
Exercising. • Practice on a regular basis. o At different times of the year. o Conduct some drills when people have opened windows and doors for ventilation. o If the facility operates at night or on weekends, conduct drills at those times also. • Participate in installation-wide exercises. • Get feedback from the participants and incorporate the lessons learned into your plan.

d. SIP Notification and Response Actions. See Table E-3 for sample guidance on establishing SIP procedures for a facility that includes background, notification, and response actions.

Table E-3. SIP Notification and Response Procedures

Background
SIP is used for an airborne hazard when it is safer to stay indoors rather than risk your life by going outside.
SIP is for short-duration protection, normally less than 2 hours.
Facility managers have identified SIP rooms, stocked them with SIP kits and instructions.
The installation commander will decide if SIP will be used during an emergency.
Notification
The facility concerned will notify the installation operations center of the emergency.
The installation operations center will notify the installation commander about the incident and the requisite notifications will occur via communications measures such as Mass E-mail or Phone calls to directorates.
Those who are notified should ensure that everyone is aware of the emergency by any means available.

Table E-3. SIP Notification and Response Procedures (continued)

Response
Facility Manager - Turn off HVAC systems and exhaust fans.
All Personnel Will Respond Immediately
Ensure that everyone remains indoors and inside the identified SIP area.
Seal the SIP room using available material. a. Remove contents from shelter kit. b. Post SIP signs (see Figure E-1) and secure the outer doors. c. Turn off all thermostats and air controls. **NOTE: Air recirculation will continue after HVAC systems are turned off if the thermostats are left on.** d. Check vents to see if air is still being circulated. If air is still coming out, seal these vents immediately! e. Seal vents and doors using plastic sheets; seal edges with long strips of duct tape. **NOTE: Precut plastic sheets are identified for doors and vents.** If necessary to help seal the room, wet a towel with water and place it at the bottom of doors.
On your way to the SIP room: a. Close windows, vents and outside doors. b. Lock up or secure classified material and funds if possible. c. Stay away from outer walls and windows when possible. d. Assist people in need of help. e. Perform self-aid and buddy care as needed. f. Create a list of personnel inside the SIP room and supply it upon request.
Follow the detailed instructions located in each SIP room.
Brief the facility manager on the status of SIP room using available communications means (e.g., phone, radio).
Sample SIP Status Report • Location Northwest corner of the lower level. • Responsible Facility Manager Installation Logistics Office • Planned Occupancy 100 • # of personnel being sheltered _____ • Time when SIP Room was sealed _____ • Contact information Phone _____ Fax _____ E-Mail _____ • # of non-life-threatening injuries _____ o Description of injuries _____
Do not allow personnel to exit the SIP area until directed to do so.
Maintain communications with the installation operations center or other designated POC for further directions.
When the "all clear" is announced, remove the plastic sheets and follow further instructions.

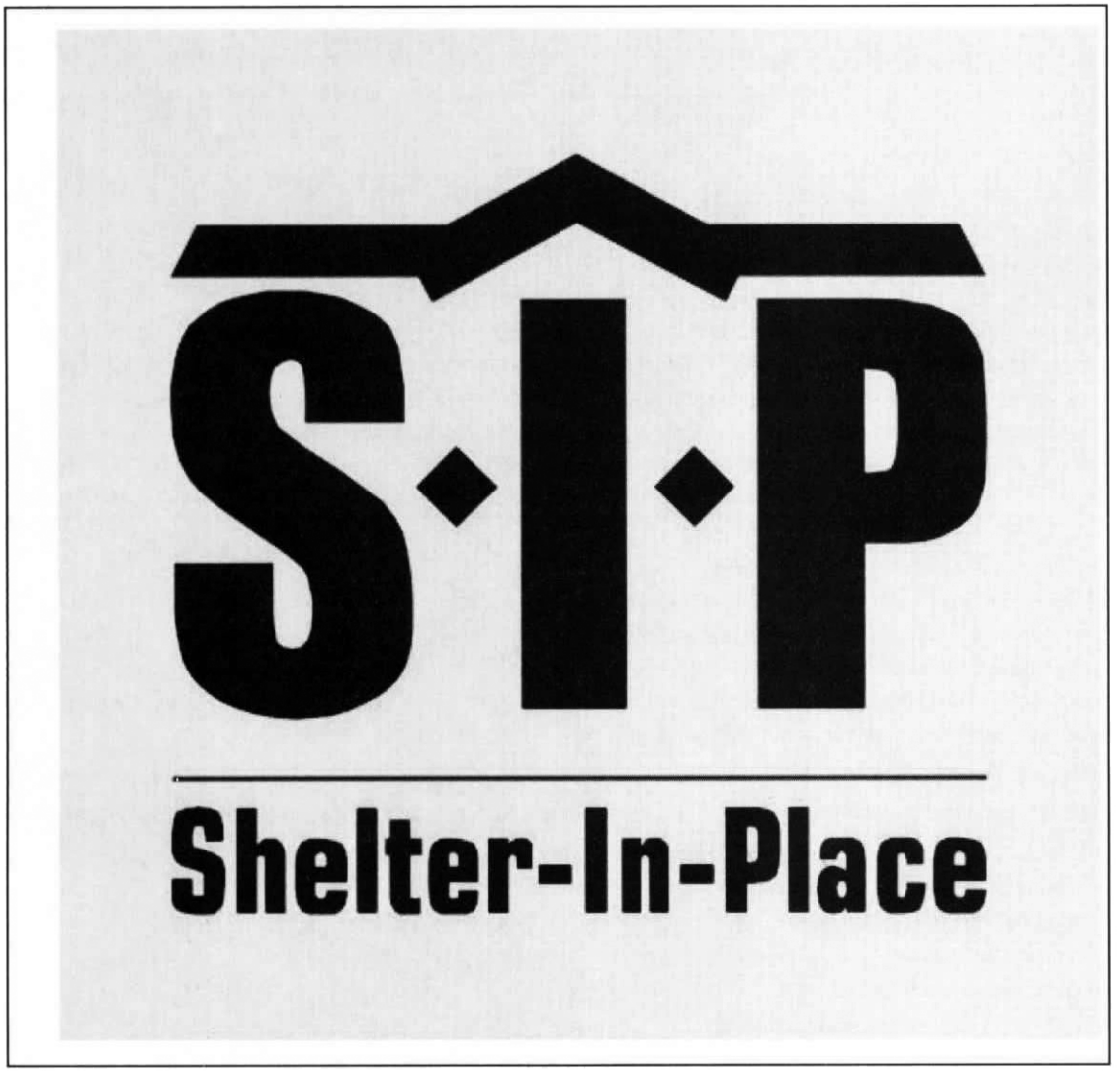

Figure E-1. SIP Sign for Posting Outside Rooms or Buildings

Appendix F

SPLIT MISSION-ORIENTED PROTECTIVE POSTURE OPERATIONS

1. Background

MOPP is not a fixed or rigid system. Commanders can place all or part of their installations in different MOPP levels (i.e., split-MOPP) or authorize variations within a given MOPP level. Based on postattack CBRN operational and health risk assessments, the commander could direct the use of different MOPP levels (e.g., split MOPP) in the different sectors or zones of the installation.

2. Base Sectoring Operations

a. When directed, or as a vulnerability reduction measure, the installation operations section must identify zones or sectors appropriate for the site geography and mission (Figure F-1). Installation planners consider factors such as work center disposition, physical features of the installation/site, and accessibility for movement between sectors or zones. If possible, planners use the same sector or zone identifications used by the security forces to identify defense sectors. This simplifies preparation, training, and use by the base population and operations section staff. It also reduces map clutter and the potential for confusion if multiple terms and actions are used for the same areas. The objective is to develop easily discernible sector or zone boundaries to simplify understanding by planners, C2 personnel, and the base populace. Once planners develop the sectors, training must be conducted to ensure that all personnel fully understand and are able to execute their responsibilities.

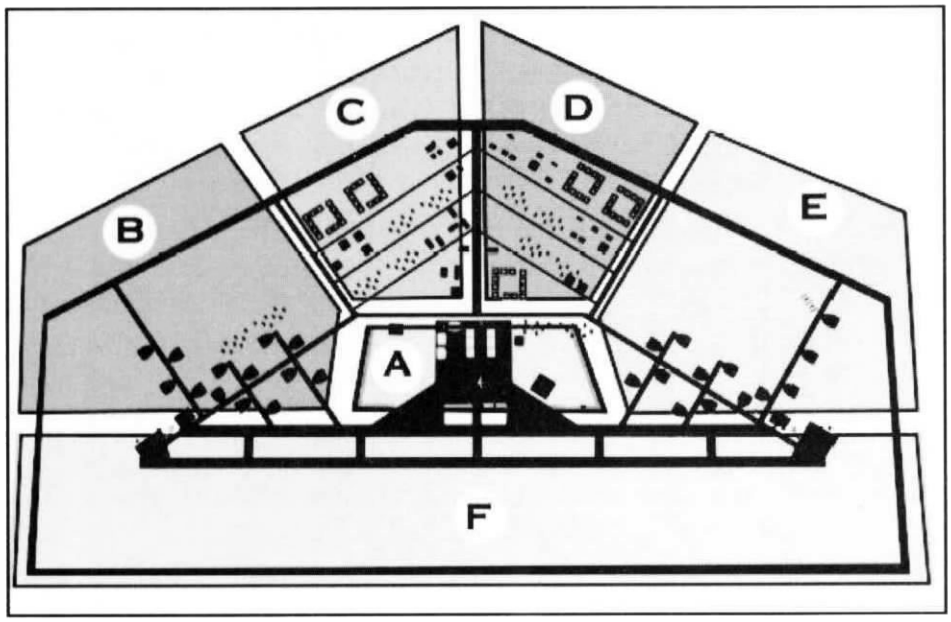

Figure F-1. Sector or Zone Identification (Notional Example)

b. Base sectoring is used to divide the installation into multiple sectors or control zones and assigns threat-based protective actions and MOPP to each individual sector/zone (Figure F-2). Assigning different MOPP levels to different sectors/zones is also known as split-MOPP. It provides the commanders with the flexibility to respond to threats in specific areas and continue operations within areas unaffected by the incident or at lower risk from the threat. Effective operations require an assured, base-wide communications system, a well-trained base population and C2 element, and senior leadership that understands the limitations, as well as the opportunities provided by this technique.

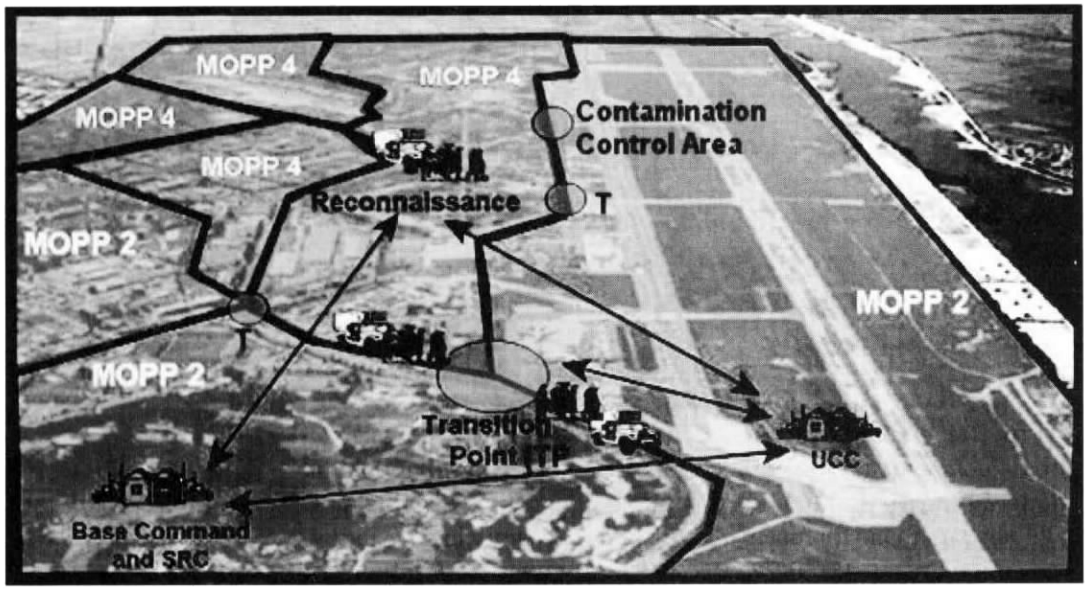

Figure F-2. Sample Base Sectoring with Split MOPP Levels

c. Once a split-MOPP capability is established, the commander can rapidly implement defensive actions in areas where threats are present and reduce mission-degrading protective actions in other sectors/zones. The need for increased mission accomplishment capability must outweigh the potentially high risk of split-MOPP implementation.

d. Split-MOPP implementation is sequential. It requires a chain of events that provides the commander with the opportunity to implement the tactics described. It also requires that the CBRN control center understand mission priorities and provide COA recommendations to the commander. The CBRN control center must continually monitor weather conditions and use input from CBRN reconnaissance teams to assess report inputs such as reports of actual contamination. Installation planners use these assessments to recommend sector or zone MOPP changes.

e. Each installation must assess its own requirements in terms of deciding how many sectors or control zones they should establish. The number and size of the zones can be based on the following factors.

- Providing grouping of similar functions or work center disposition within a sector.
- Identifying zone or sector boundaries should be easily discernable.

- Grouping similar surface areas (concrete and asphalt for example versus concrete and sand) into major portions of a sector or zone.
- Considering designating the sector boundaries along topographical lines such as higher elevation features because the higher elevations will typically have lesser vapor concentrations in an extended post-attack environment.
- Providing clear access routes in to and out of sectors/zones. Whenever possible, these access points should have a relatively large work area in the immediate vicinity.
- Providing compatibility with established or developing ground defense sector/zone designations.

3. Split Mission-Oriented Protective Posture Procedures

a. Split-MOPP is the concept of maintaining heightened protective posture (MOPP4) only in those areas (or zones) that are contaminated, allowing personnel in uncontaminated areas to continue to operate in a reduced posture (MOPP2). The reasons behind this idea are to reduce the impact on personnel and to enhance mission accomplishment.

b. There are challenges in using split-MOPP.

(1) One of these challenges is the fact that many individuals may routinely move from one area of an installation to another in performing their duties. Split-MOPP should be done on a zone-by-zone basis. An installation can use transzone operations (via transition points) to move personnel from one zone or sector to another. Transzone procedures will enable the reduction of a person's MOPP level (e.g., transitioning from MOPP 4 to MOPP2).

(2) Another challenge confronting use of split-MOPP involves detection of chemical agents and toxic industrial chemicals (TIC). Some chemical agents and TIC may not be detectable with standard detectors; or there may be residual low-level contamination present that is below the detection threshold for available detectors. Representative risk mitigation actions could include leaving contaminated equipment in the same zone and/or allowing weather to decrease the level of contamination.

4. Transzone Operations

a. Transzone operations describe the process whereby some personnel must transit across zone boundaries to sustain mission-critical functions. Those who may be required to transit across zones during split-MOPP include units such as security forces, firefighters, medical response teams, maintenance teams, communications teams, explosive ordnance disposal (EOD) teams, and CBRN reconnaissance personnel.

b. The largest volume of transzone travel typically occurs during a scheduled shift change. If a shift change occurs during a period of split-MOPP, much of the site populace may need to transit zone boundaries to return to their rest and relief area. Thus, the challenge for transzone operations is maintaining sufficient awareness of contamination status so personnel can adopt the appropriate MOPP for whatever CBRN zone personnel are in and take appropriate actions.

c. Materials to facilitate transzone operations at transition points should be readily available. This includes stocks of M8 paper, M291/M295 kits, mops and buckets

of 5 percent chlorine solutions or other decontaminants as designated by the service (e.g., use of towelettes), hand and boot troughs with 5 percent chlorine solutions, hand troughs with clear water, plastic sheeting, contaminated waste disposal receptacles, surveyor's tape, chalk, chemical signs from the CBRN marking kit, and sealed water containers (preferably full canteens with M1cap attached). If sufficient chemical agent monitors (CAMs) are available and are able to be matched with trained attendants, these chemical detectors should also be available at the transition area.

d. The number of transition areas into a particular sector should be a balance between mission requirements and control. Also, the availability of transition area attendants provides a means to help check that proper procedures are being followed. An attendant should help to reduce any cross-contamination during the transiting through the transit ion zone.

(1) Commanders should assign at least one attendant for each transition area and establish a rotation plan for the transition point (based on workload and weather conditions).

(2) If sufficient individual chemical agent monitors (ICAMs) and personnel are available, commanders should also consider assigning a second attendant to transition areas to also help minimize the risk of contamination. While effectively preplaced M8 paper can support detection of liquid agent, chemical vapor detectors at transitions points can reduce contamination risk further by detecting contamination that was not shown by M8 Paper.

e. Personnel should take the following actions at transition areas before exiting a contaminated area. See Figure F-3, page F-6, for a transition point diagram to support movement from a higher to a lower level of MOPP.

(1) At a transition point, a determination occurs whether a person should use transition point procedures or be directed to a Contamination Control Area (CCA). See Table F-1, page F-7, for representative guidance on when an individual should be directed toward a CCA for processing versus going through a transition point. The preparation of Table F-1 has been derived through use inputs from joint service-sponsored experiments and input from major commands such as Agility to Survive and Operate (ATSO) guides.

(2) Also, the transition point diagram is adaptable to whether one or two attendants are present. At the transition point, the following representative actions are taken:

- Thoroughly check the vehicle and cargo for contamination. If the items are contaminated, verify they must be taken out of the area for critical mission operations. Leave contaminated assets within the contaminated zone. Some chemical agents and TIC may not be detectable with standard detectors; or there may be residual low-level contamination present that is below the detection threshold for available detectors.
- Accomplish operational decontamination of the asset as required.

- Identify the asset as contaminated using installation instructions (e.g., mark contaminated items using CBRN marking kit signs, surveyor's tape).
- Accomplish a thorough self-decontamination regardless of whether chemical contamination is visible. Use M291/M295 kits for the IPE. Use two hand troughs (one with 5 percent chlorine followed by another clear water rinse) for glove decontamination and a boot trough for protective boot decontamination.
- If an attendant and ICAM are available, have them verify the effectiveness of decontamination. There are limitations on the use of a chemical detector such as an ICAM (i.e., ICAM as a nerve and blister agent detector and detection thresholds); however, decontamination at a transition point should generally be sufficient to decrease contamination below negligible risk. However, if a reading of "zero" bars can't be obtained, report to one of the installation's contamination control area/toxic free area (CCA/TFA) points for suit exchange prior to reducing MOPP below MOPP 4.
- Replace or refill individual canteen.

Table F-1. Processing Through a CCA

Situation	Description of Residual Hazard	Process Through CCA?
Direct contact with liquid on suit (positive M9)	High contact and vapor; suit jeopardization	Yes
Direct contact with liquid on suit (negative M9)	Unknown contact, limited vapor, suit jeopardization	Yes
Direct contact with liquid contaminated asset (positive M8 paper on item)	Unknown contact, limited vapor, unknown, suit jeopardization	Yes
Known exposure to vapors in contaminated area >4 hours	Limited vapor	Yes
Known exposure to vapors in contaminated area <4 hours	Minimal vapor	No
Direct contact with asset exposed to vapors (negative M8 paper on item)	Minimal vapor	No
Direct contact with liquid (boots only), transited through grass within 5 hours from declaration of Alarm Black	Limited contact (neutralized if boot troughs were used)	No
Direct contact with liquid (boots only); transited through, on, or over concrete asphalt within 2 hours from declaration of Alarm Black	Limited contact (neutralized if boot troughs were used)	No
No exposure	None	No

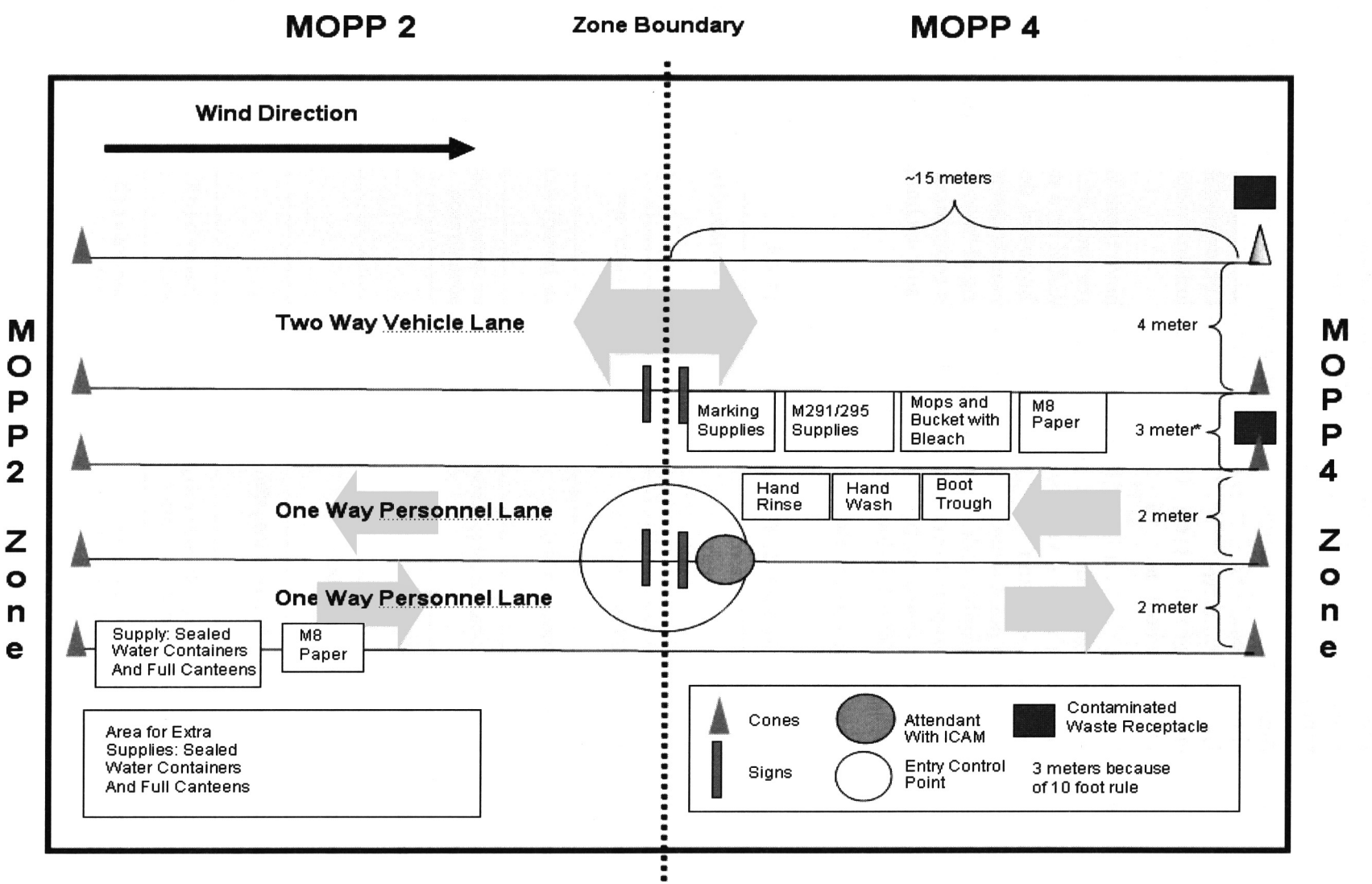

Figure F-3. Transition Point Diagram

Appendix G

CIVILIAN AND CONTRACTOR CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR DEFENSE CONSIDERATIONS

1. Background

a. DOD guidance (i.e., DODI 2000.16) directs commanders at all levels to take appropriate measures to protect DOD personnel, families, facilities, and materiel, and reduce their vulnerability to terrorist use of WMD. To support this requirement, threat assessments for potential terrorist use of CBRN weapons or material are conducted at the strategic, operational, and tactical level to support multiple users, including installation level commanders, CONUS, and OCONUS. Reports through the chain-of-command are disseminated immediately when significant information is obtained identifying organizations with CBRN capabilities.

b. Additional DOD guidance directs commanders (at all levels) to be prepared to provide incident response capabilities to support emergency lifesaving and rescue functions, to provide protection to DOD personnel and property, and, when appropriate, to conduct/support criminal investigations. All installation CBRN defense contingency plans need to account for civilians, contractors and in-transit units. Installation commander emergency response preparations should include measures to obtain current residential location information for all assigned DOD personnel and their dependents, when stationed OCONUS, including territories and possessions in moderate, significant, and high terrorism threat level areas. Additionally, any installation emergency response plans should address measures for enhanced security and/or possible evacuation of DOD personnel and their dependents. Also, installation commanders in moderate, significant, and high terrorism threat level areas provide assessments on options for special security arrangements to protect DOD personnel and their dependents living on the civilian economy. Training is a measure that commanders can use to increase the preparedness of civilian personnel within their area of operation. For example, DOD guidance also provides guidance that indicates the following:

(1) Combatant commanders, and/or services and/or DOD agencies shall ensure that every family member accompanying DOD personnel overseas are made aware of the need (e.g., Level I AT awareness training as part of their predeparture requirements) to maintain vigilance for possible terrorist actions and employ appropriate AT TTP.

(2) Commander should encourage family members to receive Level I AT awareness training prior to any OCONUS travel (i.e., leave).

2. Unique Considerations Depending Upon Operational Environment

Varied and unpredictable challenges can exist when considering CBRN protection of civilian and/or contractor personnel within either the international security environment or within any domestic setting. CBRN FP requirements for civilian and contract personnel must be included in any installation's overall CBRN defense framework. Key policy documents such as DODI 3020.41 , *Contractor Personnel Authorized to Accompany the U.S. Armed Forces*, should be reviewed as these CBRN defense plans are formulated.

a. Foreign Installations—Permissive Environment. Each component of CBRN emergency response plans at both overseas theater operational areas and associated intermediate staging bases need to have civilian and contractor personnel requirements embedded within.

(1) Planning Measures. Emergency response plans must take into account both the locations and the CBRN self defense capabilities of contingency contract personnel performing essential services. Additionally, as part of any cyclic review process, established CBRN emergency response plans should receive a review by the applicable government point of contact responsible for contractor operation to ensure that recent changes in contractor support have been considered.

(2) Preparatory Measures. Representative preparatory measures should include providing orientations and briefings to civilian and contractor personnel, providing appropriate IPE as directed, and conducting training and exercises.

(a) Providing orientations or briefings for contingency contractor organizations (personnel) should address key survival measures that may include identifying:

- Warning and alarm signals.
- Shelter locations.
- Decontamination locations.
- Mission oriented protective posture requirements.
- Required CBRN actions (preattack, during attack, post attack).
- Reporting requirements.
- Translation requirements.

(b) DODI 3020.41 states that in many contingency operations, the Government may decide it is in its interests to provide selected life, mission, and administrative support to some contingency contractor personnel. When necessary, and as determined by the Component Commander, according to the geographic Combatant Commander guidance, contingency contractor personnel may be issued military individual protective equipment including chemical defensive gear and other personal protective equipment according to applicable Military Department regulations, and the terms of the contract. See the *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* for those individual protective measures that should be undertaken during an attack. This equipment shall typically

be issued before deployment to the AOR at the deployment center and must be returned to the Government, otherwise accounted for, or purchased, after use. DODI 3020.41 further states that the Military Departments shall plan and source individual protective equipment as required by the Component Commander and the terms of the contract. Protective equipment of any type will not be procured for Category 2-4 personnel unless required in writing by the theater Combatant Commander or higher authority. These personnel are categorized as follows:

- **Category 2.** Other U.S. personnel, including—
  - U.S. military family members living on and off a military installation.
  - Non-emergency-essential US military personnel, military civilian employees.
  - DOD contractor (and subcontractor) employees other than those performing emergency-essential contractor services.
  - Employees of other U.S. Government agencies.
  - Other U.S. Government contractor (and subcontractor) employees.

- **Category 3.** Other personnel supporting U.S. military operations, including—
  - Personnel (non-U.S. citizens) who are employees of a military Service or a DOD contractor (or subcontractor), and who are not included in Categories 1 or 2.
  - Foreign military personnel employed by the host-nation government or by contractors of the host-nation government.

- **Category 4.** Allied/coalition nation personnel, including host-nation personnel and third country nationals that the U.S. may assist pursuant to an international agreement or as directed by the Secretary of Defense, such as allied/coalition military forces, government officials, and emergency response personnel.

(c) Conducting exercises can support assessments of the CBRN readiness of contingency contract personnel. The CBRN assessment could include inspections of training readiness on the ability of contractor personnel to perform CBRN or first aid tasks. See Tables G-1 and G-2, page G-4. for sample CBRN and first aid tasks that should be considered for assessment. Additionally, if an installation is tasked to operate a joint reception center, the installation may be required to train contingency contract personnel on CBRN and first aid tasks such as those sample tasks identified below in Tables G-1 and G-2.

Table G-1. Sample CBRN Tasks

• Decontaminate your skin and personal equipment using an M258A1 decontamination kit
• Protect yourself from CB injury/contamination while eliminating body waste when wearing MOPP4
• Identify chemical agents using M8 detector paper
• Protect yourself from CBRN injury/contamination with MOPP gear
• React to a nuclear hazard
• React to CB hazard/attack
• Detect chemical agents using M9 detector paper
• Protect yourself from CBRN injury/contamination when changing MOPP gear
• Replace canister on your M40 series protective mask
• Protect yourself from CB injury/ contamination using your M40-series protective mask with hood
• Maintain your M40-series protective mask with hood
• Decontaminate your skin using the M291 SDK
• Decontaminate your individual equipment using the M295 IEDK
• Protect yourself and others from CB injury/contamination by using (entering or exiting) a collective protection shelter

Table G-2. Sample First Aid Tasks

• Evaluate a casualty
• Clear an object from the throat of a conscious casualty
• Prevent shock
• Give first aid for burns
• Give first aid for heat injuries
• Give first aid for frostbite
• Put on a field or pressure dressing
• Put on a tourniquet
• Apply a dressing to an open abdominal wound
• Apply a dressing to an open chest wound
• Administer nerve agent antidote to self (self-aid)
• Administer first aid to a nerve agent casualty (buddy-aid)
• Apply a dressing to an open head wound
• Split a suspected fracture
• Perform mouth-to-mouth resuscitation

(3) Response Measures. Response measures for civilian and contract personnel are basically be the same as those actions taken by uniformed DOD personnel.

(4) Recovery Measures. Recovery measures for civilan and contractor personnel will likely include the operation of evacuation centers (see Figure G-1). *Multiservice Tactics, Techniques, and Procedures for Chemical, biological, radiological, and nuclear Protection* provides guidance for evacuation operations within the context of noncombatant evacuation operations (NEO). CBRN-related aspects that should be considered during each step of an evacuation operation include:

(a) Processing. Evacuee processing should be located in a building or other appropriate place that provides SIP or COLPRO capabilities. The area should be staffed with security, interpreters, local immigration, embassy, support liaison, CBRN and medical personnel. Factors to consider include:

- Processing should organize evacuees and provide age-appropriate applicable CBRN awareness level briefings.
- Procedures for minimum evacuee processing should integrate the potential need for decontamination support prior to implementation.

(b) Reception. Reception station personnel collect all available information, including information on the CBRN situation, from the marshalling teams who escort evacuees. Information from marshalling team log books is especially valuable because it may provide important CBRN SA data. Briefings for incoming evacuees may include information on CBRN awareness or other CBRN-related avoidance, protection and decontamination measures.

(c) Registration. Accuracy, speed and safety are key requirements during this phase of processing. Safety considerations integrate CBRN defense measures as part of the emergency response effort.

(d) Debriefing. Each evacuee should be debriefed to obtain information (e.g., CBRN data) that may affect the evacuation force, its mission, the evacuees, or other USG activities in the country. AOIs might include the following:

(e) Medical Treatment. The medical station provides emergency medical treatment (e.g., CBRN-related treatment) and immunizations, as required by the safe haven country. Injured, ill, or contaminated evacuees proceed through medical stations for first-aid and to identify medical conditions that may have an impact on the evacuation process.

(f) Transportation. Transportation personnel prepare each group of evacuees for embarkation aboard aircraft, ships, or surface vehicles to minimize exposure and the spread of contamination. The comfort station is a temporary waiting area for evacuees until they board evacuation aircraft. Comfort stations should also integrate CBRN avoidance, protection, and decontamination considerations.

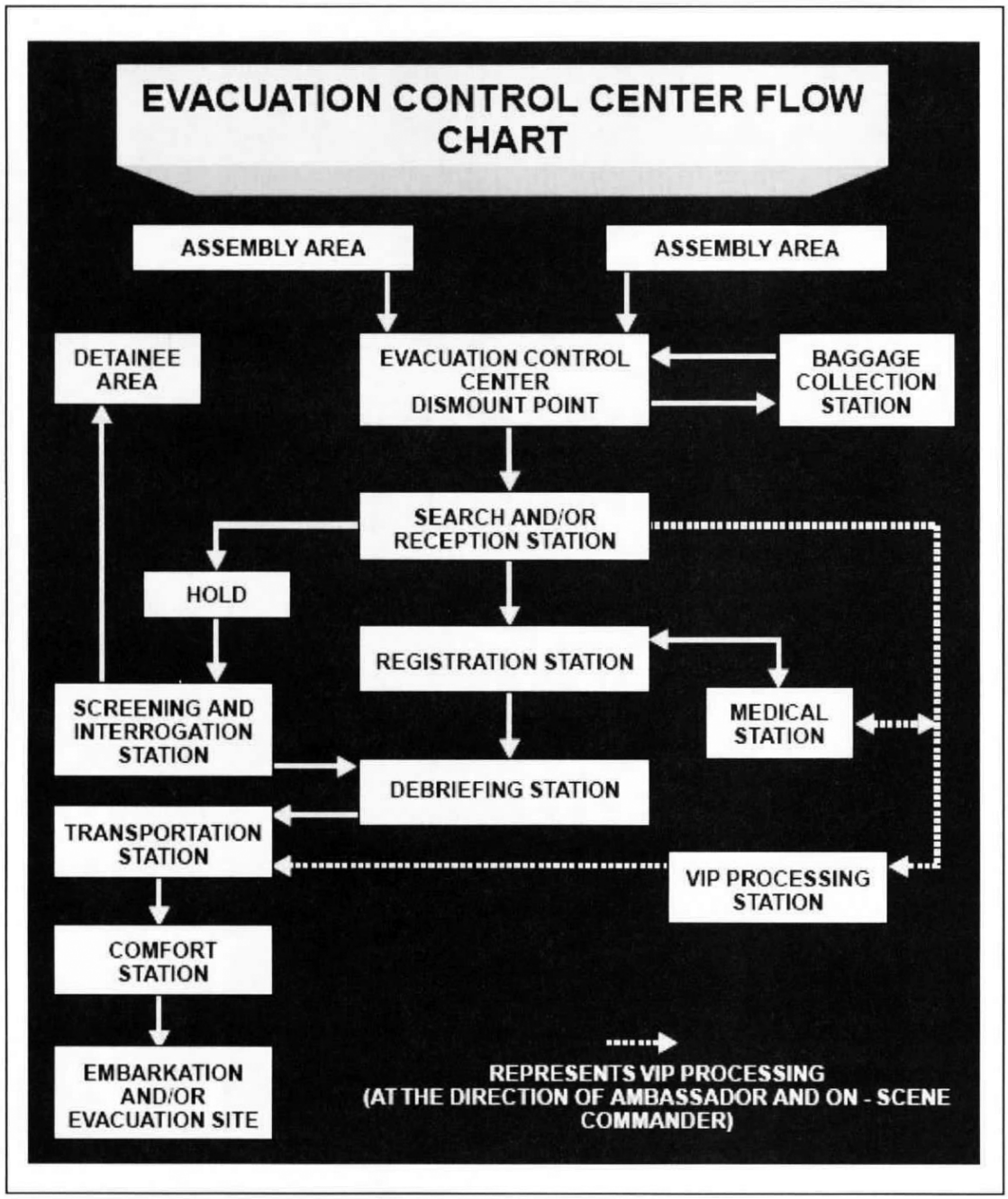

Figure G-1. Evacuation Processing Flow of Personnel

b. Domestic Installations.

(1) Commanders of forces and facilities in the United States must assess threats and vulnerabilities that may compromise peacetime operations. A number of state and nonstate adversaries may choose to employ CBRN devices and weapons against the US civilian population and infrastructures as well as military forces and facilities to impede execution of mission-essential tasks.

(2) Applicable awareness-level and AT briefings and training should be considered for civilian personnel and contractors as well as military personnel. Any advanced training or equipping of civilian personnel for CBRN protection would generally be as an exception to policy, unless there is an otherwise specified requirement. Peacetime planning, training, equipping, and supporting actions must include plans to understand threats, minimize vulnerability, and mitigate the effects of CBRN attacks in order to maintain required force preparedness.

(3) Commanders must coordinate with civilian authorities and agencies to prevent and, if necessary, mitigate and manage the consequences of deliberate or accidental CBRN employment or similar toxic material events in the United States. Detailed interagency processes guide the Armed Forces of the United States in providing military support to civil agencies to cope with such events.

(4) CONUS military installation commanders may be tasked to operate Continental United States Replacement Center. These are processing centers at selected military installations through which individual personnel will be processed to ensure that personnel readiness processing actions have been completed prior to reporting to the aerial port of embarkation for deployment to a theater of operations. Based on guidance from an applicable combatant commander, the replacement center may be tasked with providing CBRN training and equipment to applicable contract personnel.

3. Unique Terminology Associated With Contractor Operations

Five key definitions from DODI 3020.41 are provided below to help establish a framework for information discussed within this appendix:

- **Contingency Operation.** A military operation that is designated by the SecDef as a contingency operation or becomes a contingency operation as a matter of law (10 USC 101[a][13]). It is a military operation that is designated by the SecDef as an operation in which members of the Armed Forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing force.
- **Contingency Contractor Personnel.** Defense contractors and employees of defense contractors and associated subcontractors, including US citizens, US legal aliens, third country nationals (TCNs), and citizens of HNs who are authorized to accompany US military forces in contingency operations or other military operations, or exercises designated by the geographic combatant commander. This includes employees of external support, systems

support, and theater support contractors. Such personnel are provided with an appropriate identification card under the Geneva Conventions.

- **Contractors Deploying with the Force (CDF).** A subcategory of "contingency contractor personnel" defined above. CDF are employees of system support and external support contractors, and associated subcontractors, at all tiers, who are specifically authorized in their contract to deploy through a deployment center or process and provide support to US military forces in contingency operations or in other military operations, or exercises designated by a geographic combatant commander. CDF includes forward-deployed system support and external support contractors designated to remain in place in theater when a contingency is declared. Such personnel are provided with an appropriate identification card under the Geneva Conventions. CDF usually work for the US military forces under a deployable contract agreement in peacetime and in many cases have a long-term relationship with a specific unit. They usually live with and provide services directly to US military forces and receive government-furnished support similar to DOD civilians. CDF do not include TCN or local national personnel hired in theater using local procurement (e.g., day laborers).
- **Essential Contractor Services.** A service provided by a firm or an individual under contract to the DOD to support vital systems in support of military missions considered of utmost importance to the US mobilization and wartime mission. The services, which shall be designated in the contract, are essential because the DOD components may not have military or DOD civilians to perform these services immediately or the effectiveness of defense systems or operations may be seriously impaired, and interruption is unacceptable when those services are not immediately available. Most support under the external support and systems support contracts falls into this category as well as some support under theater support contracts.
- **Joint Reception Center (JRC).** The center established in the operational area (as directed by the joint force commander), with responsibility for the reception, accountability, training, and processing, of military and civilian individual augmentees upon their arrival in the operational area. It is also the center where augmentees will normally be outprocessed through upon departure from the AO.

Appendix H
RESPONSIBILITIES FOR INSTALLATION CBRN DEFENSE

1. Installation Commander

a. The responsibilities of installation commanders in all operational environments include—

- Developing a CBRN emergency response plan that integrates use of installation, tenant, and transient resources into one coordinated document; and ensuring that the CBRN defense plan is synchronized with the overall installation emergency response plan. See Appendix A for a sample template that can be used to support a CBRN defense plan.

- Exercising the CBRN emergency response plan on a periodic basis across all functional activities on the installation (to include tenant and transient units) using methods that range from table-top to full-scale exercises.

- Directing installation activities to provide resources (e.g., personnel, equipment) that support the installation CBRN defense plan.

- Directing the periodic update of the installation CBRN defense plan based on multiple inputs – exercise after action reports (AARs), change in capabilities, etc.

- Designating a commissioned officer, noncommissioned officer (NCO), or civilian staff officer as the CBRN defense officer/element (i.e., emergency disaster planning officer) with installation CBRN defense and emergency response program management responsibilities.

- Assigning the CBRN Officer (i.e., emergency disaster planning officer) the responsibilities for installation CBRN defense and emergency response plan coordination and any supporting staff needed.

- Designating an installation intelligence focal point. If the installation does have a dedicated intelligence specialist assigned, the duty can be assigned on a collateral duty basis.

- Establishing an installation intelligence fusion cell.

- Creating a CBRN emergency response-working group (WG) within the installation force protection committee, and receiving periodic updates and recommendations from the WG. The WG provides recommendations on how to improve the planning, training, and exercising of the installation CBRN defense program. For small installations such as Air

Force bare bases, the WG may be an ad hoc organization with CBRN, operations, intelligence, personnel, and logistics representatives.

- Directing inspections and assessments of installation CBRN readiness and preparedness.

- Executing applicable memorandums of agreement (MOAs) or memorandums of understanding (MOUs) with activities such as tenant units or local civilian jurisdictions that will provide mutual aid.

b. Installation commanders in a foreign operational environment include the following additional requirements:

- Providing an assessment (to the applicable higher command) on the coordinated and combined capabilities of installation and HN CBRN emergency response capabilities to support the installation. This VA assesses the CBRN readiness of the installation's personnel, equipment, and training.

- Integrating installation and HN emergency response capabilities to the degree needed to support sustainment of installation capabilities (e.g., casualty decontamination, CBRN hazard assessment, postattack reconnaissance). Integrated training and planning between U.S. and HN resources supports increased installation readiness.

- Coordinating installation CBRN defense and emergency response plan measures with the respective area or base cluster commander to address measures such as security and/or possible evacuation of DOD personnel and their dependents.

- Receiving briefings on Status of Forces Agreements (SOFAs) and other international agreements affecting CBRN response and HN emergency response capabilities appropriate to the installation.

- Identifying interoperability requirements and mitigation measures to help meet emergency response requirements. For example, mitigation measures could range from communications hardware, or nozzle connections between hoses and HN fire hydrants.

- Monitoring, supporting negotiations and/or implementing MOUs and/or MOAs with HNs, as necessary, to support obtaining HN CBRN defense and emergency response assistance.

- Coordinating training opportunities with supporting HN resources that will periodically exercise existing MOUs and/or MOAs.

- Reviewing and approving exercise scenarios for CBRN exercises that are consistent with the regional threat assessment.

- Identifying CBRN-related mission-essential Universal Joint Task List (UJTL) and associated Service-level tasks that support installation emergency response readiness requirements.

2. Installation Staff

The installation staff is responsible for—

- Developing, implementing, and supervising the organizational CBRN defense program.
- Coordinating with the appropriate command's intelligence section to help ensure awareness of the CBRN and TIM threat. The intelligence section disseminates threat information to the installation and coordinates the with local, state, federal or HN law enforcement and intelligence agencies to maintain an updated CBRN threat analysis.
- Assessing the installation's CBRN readiness and vulnerabilities based upon the threat.
- Developing the installation's CBRN defense plans (plan can be an annex to the existing antiterrorism [AT]/FP plan) and training guidance.
- Coordinating and tracking execution of installation CBRN defense training to include Awareness, Operations and HAZMAT Technician qualification.
- Identifying, tracking and conducting follow up on CBRN defense logistical requirements.
- Participating in the installation's AT WG.
- Including CBRN vulnerabilities in the annual installation threat assessment.
- Providing an installation CBRN threat analysis as part of the Installation VA.
- Integrating installation CBRN emergency response initiatives into installation resource planning.
- Identifying and prioritizing resource shortfalls and providing options on how to mitigate installation CBRN emergency response requirements.
- Ensuring that the installation's CBRN emergency response plan is integrated with local emergency response plans, as necessary, including tenant and transient units.

- Ensuring that the installation develops plans and conducts appropriate training for the general installation population (including tenant and transient unit personnel) and CBRN emergency response teams and personnel.

- Conducting inspections to determine the current status of the installation's capabilities to include strengths and weaknesses of the CBRN emergency response program.

- Conducting periodic installation CBRN VA to determine installation shortfalls and vulnerabilities to CBRN attacks.

- Coordinating meetings, as necessary, with emergency responders on and off the installation on steps such as establishing emergency evacuation routes.

- Incorporating observations and lessons learned from VAs.

- Incorporating in the CBRN defense plan, measures to mitigate the vulnerability of critical infrastructure nodes on the installation and possible support, as appropriate, to critical infrastructure nodes off the installation that may affect an installation's ability to conduct its mission. The assessment may include measures to mitigate vulnerabilities for building heating ventilation and air conditioning (HVAC) systems (e.g., train building personnel on HVAC system use to stop the external flow of air into the building) or preparing building SIP kits.

- Incorporating a communication guideline for standing operating procedures with designated sequences of call signs for coordination with mutual aid partners whenever possible.

- Conducting periodic reviews of CBRN emergency response program and plans (at least annually) to facilitate program enhancement and to ensure compliance with DOD standards.

- Integrating all the various activities and units on the installation into all installation CBRN and AT/FP exercises, as appropriate.

- Conducting liaison with tenant and transient units and providing them with the information required so they become familiar with installation requirements such as warning and reporting. See Appendix C for a sample checklist that could be used for exchange of information between installation and tenant or transient units.

3. CBRN Responders

The responsibilities of CBRN Responders include activities having responsibility for installation response report and update their status and capabilities to respond to a CBRN incident to the installation staff. The installation staff, knowing the capabilities of the available responders, will then include them into the CBRN Defense plan as appropriate.

4. Tenant Units

a. Tenant units report and update their status and capabilities to respond to a CBRN incident to the installation staff. The installation staff, knowing the capabilities of the tenant units, will then include them into the CBRN defense plan, as appropriate.

b. Also, according to the installation response plan, commanders of tenant units provide the applicable staffing and resources. The tenant unit commander also provides the requisite training for their personnel and liaison personnel to support coordinated and sustained operations.

5. Transient Units

Transient units must report their status and capabilities to respond to a CBRN incident to the installation staff when arriving at an installation. The installation staff, knowing the capabilities of the transient units, can then include them into the CBRN defense plan as appropriate.

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Appendix I

CHEMICAL CONTAMINATION CONTROL FOR AIRLIFT OPERATIONS

1. Introduction

a. Successful airlift operations in a chemical environment are dependent on how contamination avoidance and control are performed. Commanders must be aware that contamination control and decontamination may only reduce the hazard and not eliminate it altogether. Once an aircraft is contaminated, it is very difficult to decontaminate completely due to the various materials used in its construction, the ability of some chemical substances to penetrate these materials, and the interior of the aircraft. Contamination avoidance is the best way to deal with this hazard.

b. Units need to have effective procedures that emphasize contamination avoidance. When contamination occurs the priority changes from "avoidance" to "contamination control". The final priority should be decontamination. During decontamination operations, the primary objective is to reduce the contamination hazard to the lowest possible level to enable a reduction in individual protection and to prevent transfer of contamination. To ensure the least degradation of operational effectiveness, commanders will need to apply risk-management to all contamination control procedures.

2. Threat

Airlift operations may be threatened directly or indirectly by the use of chemical weapons. A similar threat exists from toxic industrial chemicals (TICs) from direct attack or through release other than attack (ROTA). Dependent on the substance involved, areas may become contaminated and remain so for extended periods of time.

3. General

a. Purpose. To help personnel and commanders to better control chemical contamination of aircraft, aircrew members and payloads. To this end, principles are being provided that apply to fixed and rotary wing cargo aircraft and supporting environment.

b. Relation of Chemical Contamination Control for Airlift Operations to Mission Priority. The extent of required contamination control actions is based on a range of movement priorities represented by three operational scenarios: Mission Essential, Mission Support, and Retrograde. As operational priorities change so will the contamination control procedures that influence the movement of payloads and the priority for decontamination.

(1) Mission Essential Payloads. This cargo will be moved regardless of contamination. There will be severe shortages of time, materials, and/or personnel to

conduct contamination control activities. The aircraft's interior may become contaminated.

(2) Mission Support Payloads. Some contamination control measures are taken before the cargo is loaded. Limited time, materials, and/or personnel are available to execute contamination control activities. Payloads with liquid hazards will not be loaded. Payloads with vapor hazards are loaded if necessary. The aircraft interior may become a vapor hazard area.

(3) Retrograde Payloads. Adequate time, materials and personnel exist to complete maximum contamination control. No payloads with field detectable vapor or contact hazards will be loaded. The aircraft interior remains contamination free.

4. Contamination Avoidance

Contamination avoidance in airlift operations aims at ensuring the sustainability of such operations by putting into effect those principles that will protect personnel and material resources from becoming unnecessarily contaminated as well as marking of this contamination. Its principles encompass—

- Make every effort, if at all possible, to avoid conducting airlift operations in a chemically contaminated environment. If however, it is essential to conduct operations in such an environment, liquid contamination inside the aircraft should be avoided.
- Practice contamination avoidance procedures around suspected contaminated payloads and areas.
- Prepare, cover, or protect required materials before a chemical attack. (e.g. by using Chemical Agent Resistant Material (CARM), plastic sheeting, or placing under cover).
- Avoid contact with wet or moist areas to include water puddles, outer building walls, trees, leaves, and grass that may contain contamination.
- Use contaminated materials in contaminated areas only and keep uncontaminated materials covered when in use around contaminated materials and areas to preclude cross contamination.
- Mark contamination.

5. Contamination Control

Contamination control in airlift operations aims at managing the contamination in order to minimize its impact on such operations. Its principles encompass:

- When performing contamination control, the command authorities must balance the need for decontamination against the risk of contaminating the interior of the aircraft.

- The aircraft commander must ensure aircrew members and passengers accomplish contamination control procedures when operationally feasible.
- Extreme care must be taken to prevent contamination of the aircraft interiors during ground operations.
- Once chemical contamination has been confirmed, consider the aircraft interior at least a vapor hazard area and the environment outside the aircraft, to include the aircraft itself, to be at most a liquid hazard area.
- Robust aircraft entry and exit procedures must be in effect to prevent cross contamination.
- Contaminated payloads should be positioned in the aircraft to minimize the vapor hazard to the aircrew as well as to payloads. Rotary wing aircraft should consider transporting contaminated cargo externally.
- Payload should be as clean as operationally possible when presented for loading. This is the responsibility of the owner/operator.

6. Decontamination

Decontamination in airlift operations aims at reducing or rendering harmless, temporarily or permanently, the contamination for the purpose of sustaining such operations and minimizing the requirement for both individual and collective protection measures. Its principles encompass:

- Equipment that cannot be fully containerized should be decontaminated such that it does not present a contact hazard. Further decontamination beyond this point is desirable.
- Personnel should be decontaminated such that they do not present a contact hazard. Further decontamination beyond this point is desirable.
- Maximum use of opportunities to weather both contaminated aircraft and payloads should be made.
- Decontamination measures should not damage or interfere with aircraft or payloads so as to compromise the airlift operations.
- Extensive decontamination is labor and resource intensive and may not always be verifiable.
- If contamination avoidance and control measures were not successful or could not be applied, in-flight decontamination can be considered as an option.

7. Avoidance Considerations for Airlift Operations

a. Nonessential Items. All items not required or which may be rendered unusable in a contaminated environment should be removed from the aircraft. This should be done prior to flying into a contaminated area, prior to flying under CBRN Threat Level High conditions, and/or before uploading contaminated payload. Plan minimum time for aircraft ground operations under chemical conditions. Plan for the flight deck to remain isolated throughout operations in a chemical environment, or with contaminated payload, to prevent the physical transfer of liquid contaminants onto it.

b. Pre-flight Crews. If already in a contaminated environment use pre-flight crews, if available, to prepare the aircraft for flight and load aircraft while the crew is in crew rest. Aircrews should complete pre-departure preparations to the maximum extent possible prior to leaving shelters. To aid in decontamination, consider crew members double bagging all personal effects and professional gear prior to leaving the shelter.

c. Information Flow. Be prepared to pass chemical contamination information through approved command and control channels. This information may be used to make divert decisions and prepare for possible contamination control operations.

d. Disposition of Aircraft Equipment. Any aircraft items such as chocks, safety pins, or engine covers that were contaminated during ground operations should be disposed of or placed in clean plastic bags and sealed to restrict aircraft contamination. Ensure these items are labeled as contaminated. Report these contaminated items upon landing.

e. Ground Transportation. Upon arrival at the contaminated aerodrome, request transportation if aircrew must deplane. To minimize aircrew exposure do not deplane until ground transportation is ready for immediate boarding. Aircrew should wear appropriate IPE when deplaning into a contaminated environment. Aircrews will be transported to the aircrew contamination control area each time they deplane or transit a contaminated area.

8. Contamination Control Considerations for Airlift Operations

a. Contamination control procedures will be dependant on the mission priority and, as such, the level and nature of contamination control can be tackled using a tiered approach. Those mission priorities are defined as—

- Mission-essential payloads.
- Mission support payloads.
- Retrograde payloads.

b. Prior to loading, the payload will need to be processed. This should be done through a Contaminated Payload Control Area (CPCA).

9. Contaminated Payload Control Area (CPCA)

a. Design.

(1) General Considerations. Coordinated aerodrome planning is necessary to identify required contamination control areas, contaminated waste disposal areas, associated equipment and to develop specific CPCA set up and operating procedures. Aircrew and their professional equipment should be handled in accordance with STANAG 2426. Aircrew contamination control operations may best be established separate from other operations to avoid cross contamination.

(2) Contaminated Payload Control Area Layout. CPCA layout should be application specific. The CPCA has an entrance, liquid hazard area (LHA) and vapor hazard area (VHA). The LHA is further divided into decontamination and weathering zones. The marshaling and loading zones, as well as the interior of the aircraft, must be considered at least a VHA. Routinely check for contamination spread between these areas and decontaminate as necessary. A line should clearly separate the LHA and VHA. If required, use areas that provide splinter and liquid contaminant protection to establish these zones. Instructional signs, decontaminants, containers, and other equipment and supplies used in the CPCA vary according to the CPCA design, processing rates, and supply availability. Specific considerations for each zone may be:

- **Entrance zone.** In this area payload is monitored for contamination. The area must be downwind from aircraft loading sites (Marshaling Zone), but cross wind from the decontamination zone. Check the payload for contamination at the entrance to the CPCA. Clean payloads should continue to the marshaling zone and contaminated payloads go to the decontamination or weathering zones. Decontaminable items with liquid contamination should proceed to the decontamination zone. Vapor hazard only payloads should go to the marshaling or loading zone only after maximum weathering.

- **Decontamination zone.** Liquid contaminated items that can be decontaminated without being damaged should proceed to the decontamination zone. This site must be established downwind from the Marshaling and Loading Zones. If a liquid contaminated item cannot be pressure or hand decontaminated without being damaged, it should remain in the weathering zone.

- **Weathering zone.** In the weathering zone contaminated payload may be allowed to aerate for as long as possible. Areas should have maximum ventilation, sunlight and temperature appropriate for the payload. Aeration time depends on the temperature, amount and contaminant type, humidity, airflow, and the structure characteristics of the underlying material (its porosity and/or resistance against a contaminant penetration). Accordingly contaminated items should be monitored before removing them

from the weathering area. If available, set aside a vapor concentration/vapor trap area to concentrate vapors for monitoring purposes. Cover or containerize cargo when weathering is complete and load when appropriate.

- **Marshaling zone.** Clean cargo is moved from the Entrance Zone and Decontamination Zone to the Marshaling Zone to await aircraft upload. The marshaling zone is considered a payload overflow area where payloads await movement to the loading area. Clean cargo should be covered or containerized to avoid cross contamination and protected from future contamination.
- **Loading zone.** The loading area is where all aircraft uploading takes place. All payloads in this area are ready for immediate upload, using standard aircraft loading procedures. This area must be established upwind from all other sites
- **Aircraft interior.** Maximum efforts should be taken to keep the aircraft interior from becoming contaminated with liquid chemical compounds. Once contaminated with liquids, the aircraft interior would be extremely difficult to decontaminate.

(3) Contaminated Waste Disposition. Use containers and identify areas to collect contaminated waste and items removed in the CPCA. Provide a waste container in each zone of the CPCA. As a minimum, use containers to hold liquid contaminated items. Liners are recommended for all containers to help remove and store or dispose of their contents. Sealing plastic bags containing contaminated items will significantly reduce vapor levels in the CPCA and ultimately in the aircraft. The number of containers and plastic bags needed depends on the CPCA design, amount of contamination and the CPCA processing rate.

(4) Aircraft Loading. Ideally CPCAs should be laid out to accommodate simultaneous loading of passengers and cargo and inhibit cross-contamination of the aircraft.

b. Duties. The commander will determine the manpower needed for CPCA duties, dependant on CPCA size, design, and processing rate. CPCA duties may include—

- **Supervisor.** The CPCA supervisor would be a pre-designated, CBRN-trained logistician responsible for CPCA management. More than one supervisor may be needed for the decontamination, weathering and loading areas depending on the CPCA design and processing rate.
- **Assistants.** CPCA assistants, if used, are people selected to help operate the CPCA. They would perform assigned CPCA support tasks as directed by the CPCA supervisor. They should have basic CBRN and payload handling knowledge.

10. Mission-Essential Payloads

a. Owner/Operator. Owner/operators should ensure the payload is decontaminated as much as possible before being packed or containerized.

b. Ground Marshaling Personnel. Before cargo is palletized or containerized, ground marshaling personnel should monitor for vapor and liquid contamination to determine the extent of contamination. The payload should then be allowed to weather as long as possible, decontaminated, then covered or containerized to reduce contamination as much as possible.

11. Mission Support Payloads

a. Owner/Operator. The owner/operator should ensure that the payload is decontaminated as much as possible before being packed or containerized.

b. Ground Marshaling Personnel. Before cargo is palletized or containerized, ground marshaling personnel should monitor for vapor and liquid contamination to determine the extent of contamination. The payload should then be allowed to weather as long as possible, decontaminated, then covered or containerized to reduce the contamination to a vapor hazard.

(1) Liquid Hazard Areas/Vapor Hazard Areas. The entrance and decontamination areas are considered liquid hazard areas. For planning purposes consider the payload waiting and loading areas as vapor hazard areas.

(2) Non-Decontaminable Materials. All liquid contamination must be reduced to a negligible risk level. Surfaces such as fabrics, plastics, and wood that cannot be reduced to this level should be covered, removed, discarded, or containerized.

(3) Moving Payloads. After the liquid hazard is removed, the ground crew is to move the payload to the payload waiting or loading area. Loading operations may require using forklifts and similar devices that require decontamination after use.

12. Decontamination Considerations for Airlift Operations

These decontamination considerations are generic in nature and ground personnel will need to modify procedures to fit specific aircraft and payloads. Crews should perform normal periodic aircraft interior/exterior wash procedures and chemical spill clean up procedures according to published technical orders and local guidance.

a. Decontamination Preparation. Remove surfaces such as fabrics, plastics, and wood that may be damaged by decontamination actions (weathering, high pressure wash, hand brushes, or heat) or decontaminants. Preparation of payload will be dependant on its nature.

b. Decontamination Methods. Choose a decontaminant and method of decontamination based on the hazard and possible effects of decontamination. Refer to aircraft technical orders/regulations when choosing a decontaminant. Some aircraft and payloads may be decontaminated by high pressure wash, while others are damaged by

anything more than a slow detailed hand washing. If in doubt, use the hand washing method. Vapor contamination hazards may continue depending on the amount of contamination that has been absorbed. Ensure hazardous run-off is controlled and disposed of appropriately. Decontamination, being a time-consuming process, will only be executed if mission essential. In this case, carry out operational decontamination in order to release the aircraft as soon as possible for future missions.

(1) High Pressure Water Washing. When using high pressure equipment, consideration must be given to the run off produced by this method, as it will contain contamination; contaminated run off will need to be managed, which will steer the decontamination procedures.

(2) Hand Washing. Hand wash aircraft and payloads that cannot be decontaminated by high pressure water systems. Apply the decontaminant with a broom, brush, mop or rag.

(3) Weathering. Weathering is an excellent alternative to washing and should be considered. The use of forced air can aid this process. Any of these methods will reduce the decontamination requirements of the receiving aerodrome.

c. System Checks. Perform system and equipment checks to identify damage or corrosion caused during decontamination operations. Annotate in the aircraft maintenance forms the type of decontaminant and manner of decontamination used. Include other information directed by technical manuals.

d. Effective maximum payload decontamination conducted prior to loading the aircraft, may allow selected passengers and crew members to remove some protective equipment, thus reducing the IPE heat burden. However, depending on the situation, keeping the aircraft contamination free may not be a realistic alternative.

13. Guidance on Retrograde Payloads

a. Allowable Contamination Levels. The inside of the aircraft will be considered a negligible risk area. Complete all decontamination actions prior to loading payload on the aircraft.

b. Owner/Operator Responsibilities. The owner/operator should use weathering, decontaminants and washing procedures as necessary to reduce contamination to a negligible risk level.

c. Airlift User Responsibilities. Troops at forward airheads must make every effort to minimize contamination of their retrograde payloads at the originating site.

d. Use the following guidance to determine if a lower level of in-flight chemical protection can be used with a decontaminated payload.

(1) In-Flight Monitoring. Check for chemical vapors after reaching cruise altitude. Vapor levels may take time to build up to detectable levels and periodic or continual monitoring will be required. Length of flight may render vapor

concentration and off-gassing insufficient to recommend removing chemical protective gear. Aircraft commanders must weigh negligible benefits of short in-flight decontamination against other flight considerations.

(2) Monitoring Areas. As a minimum, the aircrew will monitor the aircraft cargo compartment, flight deck, and any area where a change in protective gear is desired. Vapor levels are likely to be highest in the cargo compartment.

(3) Risk Management. Aircrew should not remove eye/respiratory protection. Other personnel may only remove the protective mask to eat and drink only after performing unmasking procedures. Once immediate needs are satisfied, personnel should don eye/respiratory protection. Aircrew members and/or passengers exposed at any time to a contact hazard, should remain in their complete IPE until processed through an approved contamination control area.

14. Guidance on In-Flight Decontamination

a. Risk Management. The aircraft commander must judge the need to decontaminate the payload in flight against the effects this will have on the mission. In-flight decontamination is not a standard method of decontamination and is only used when absolutely necessary.

b. Maximum Decontamination. If the primary concern is in-flight decontamination of payload, the aircraft commander should consider:

(1) Departure.

(a) During departure, use standard smoke and fume elimination procedures and maximum allowable heat, to purge the aircraft after leaving a contaminated area.

(b) Purging may require an intermediate leveling off at a safe altitude to permit depressurization while conducting these procedures.

(2) Enroute.

(a) Minimizing Vapor Hazards. Consider keeping the payload and the cargo bay at the lowest possible temperature for the duration of the flight to minimize vapor build up. Isolating the flight deck area by use of an expendable barrier (plastic sheeting) or keeping the flight deck door closed will minimize the vapor build up in the flight deck area.

(b) Ventilation. Consider using all ventilation options to reduce vapor contamination in the aircraft.

(c) Minimizing Contact Hazard. Consider decontaminating any aircraft surfaces that are contaminated by the payload.

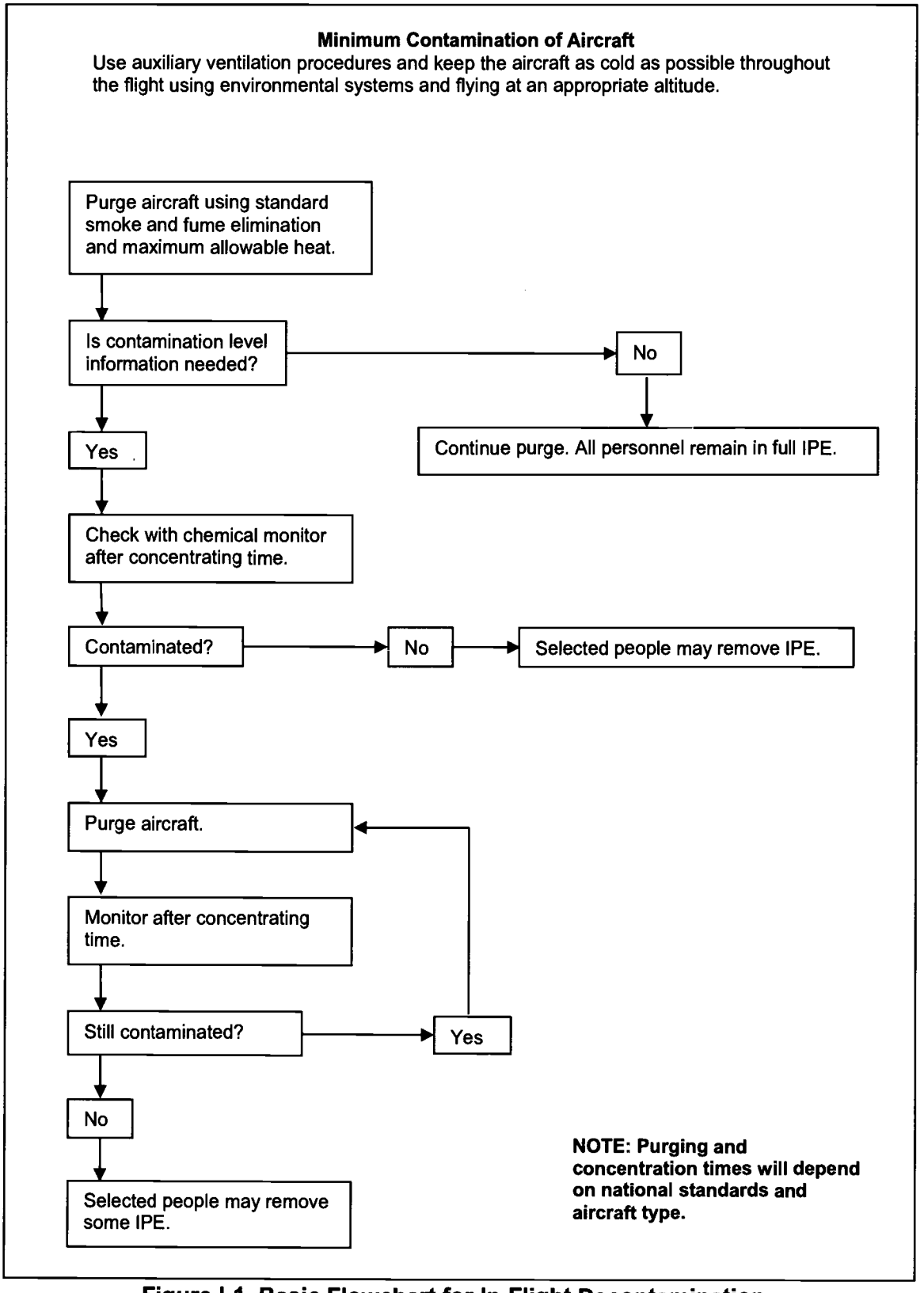

Figure I-1. Basic Flowchart for In-Flight Decontamination

15. CONSIDERATIONS FOR TACTICAL AIRLIFT AND AIRDROP CONTAMINATION CONTROL

a. Scenarios. There are four possible scenarios by which aircraft may be exposed to contamination:

(1) Attack. While on the Ground. To minimize the effect of an attack, the following precautions should be taken, when practicable, whenever the aircraft is shut down on the ground. Hangar aircraft or park close to and downwind of trees and buildings. Close doors and windows. If doors and windows have been removed then alternative covers should be considered. Cover tires and canopy/window with perspex or a similar material.

(2) Fly-Through Contamination. Flight through liquid/particles falling to the ground is extremely unlikely but flight through a vapor hazard may take place. Aircrew and passengers should wear individual protection and, when possible, doors and windows should be closed. Close all non-CBRN air vents, where this is practicable, as a measure against the ingress of chemical substances. If closure is not possible, some form of external over-taping may be appropriate.

(3) Land on Contaminated Ground. When landing a aircraft on contaminated ground or helicopter hovering close to it, the re-circulation of spoil by the prop/rotor wash will result in a significant spread of contamination to the aircraft, people, and area. It may even penetrate to the interior of the aircraft. Aircrew and passengers should wear individual protection and, when possible, doors and windows should be closed. Close all non-CBRN air vents, where this is practicable, as a measure against the ingress of chemical substances. If closure is not possible, some form of external over-taping may be appropriate.

(4) Carry Contaminated Cargo/Personnel. The primary consideration when required to carry contaminated cargo/personnel is to employ contamination avoidance/control procedures to the maximum extent possible. Use of external loads should also be considered, when practical. Flying with doors and windows open will increase the rate of weathering if carrying contaminated troops. When having to carry contaminated personnel or cargo, personnel could undergo a suit change and the cargo could be containerized. Protecting the floor with covers will aid subsequent decontamination but tears in the fabric could increase the risk of contamination behind floorboards and may present a flight safety hazard.

b. Planning. As part of the planning process, the commander should apply risk-management and should assess the likely threat including the risk of exposure to contamination. He will seek to reduce the risk and maximize operational capability by determining levels of aircrew protection and establishing procedures for the decontamination of aircraft and equipment. Commanders should be aware that, depending on the extent of contamination, once any aircraft is contaminated by chemical substances, it may take an unacceptable amount of resources and time, to remove all contamination due to the intrusive and penetrative nature of the substances

involved. During this decontamination, aircrafts would not be supporting ground forces, their major role, which may be unacceptable. Consequently, commanders may have to accept, in the spirit of risk management, operating contaminated aircrafts in the knowledge that the risk to crews and passengers has been reduced to operationally acceptable levels. The following factors should be considered:

- Time for which aircrew must wear IPE.
- Type of mission.
- Capabilities of unit CBRN personnel.
- External support available from CBRN units.
- Decontamination assistance available from the supported unit.
- Support available to detached elements.
- Designation of a decontamination site.
- Employing hazard avoidance whenever possible within the context of the mission.
- Selection of optimum sites and landing techniques minimize airframe and underslung load contamination.
- Availability of a toxic free area.
- The availability of CBRN warning and report information.

c. Detection. Detection and alarm equipment will usually provide adequate warning of many chemical hazards to aircraft sites although it may take some time to assess the precise nature and likely duration of contamination. In the air, visual detection of liquids is possible using chemical detection paper attached to the windscreen of the aircraft and chemical alarms may also be fitted. Where adequate stand-off chemical detection technologies exist, not interfering with the payload of the aircraft, nations should consider their employment as a means of advanced warning of chemical hazard to safeguard aircrews and their passengers.

(1) On-board the aircraft, CBRN equipment may be used to detect, identify and monitor levels of chemical hazard; however, chemically sensitive papers will only detect and identify liquid chemical agents.

(2) On-board CBRN detection is unlikely to provide aircrew or passengers sufficient warning time to mask up when in flight to protect them against the effects of the threat substance. This is especially the case with nerve agents where equipment would be required to detect minute quantities to prevent the aircrew from suffering from miosis.

d. Contamination Avoidance.

(1) Commander should have access to CBRN Warning and Reporting information to inform them of hazard areas. CBRN reconnaissance and survey will deny or confirm hazard areas.

(2) If aircraft must land in contaminated areas, consider the tactical situation and if possible pick landing zones that will have a reduced transfer effect.

(3) Contaminated crews should conduct airframe inspections without touching or shaking items (when possible). Many points can be inspected visually.

(4) If possible, provide overhead cover for parked aircraft. Ensure engine plugs, fly away gear and hatches are in place whenever possible.

(5) Apply adhesive detection paper to the landing gear of the aircraft. Groundcrew should monitor the aircraft for contamination before servicing and after sorties. Another piece of adhesive detection paper can be placed on the windscreen where the aircrew can see it.

(6) During terrain flight, areas of heavy vegetation should be avoided because vapor is dispersed less quickly where the wind is blocked. Open areas or high ground afford the best opportunity to evade this hazard.

(7) Artillery impact areas should be avoided as chemical munitions may have been used.

e. Contamination Control.

(1) Ground crews could conduct operations without requiring the aircrew to exit the aircraft.

(2) Limit the number of aircraft that must operate in a contaminated area or use aircraft already contaminated.

(3) When carrying contaminated personnel or casualties, lining the troop compartment with a chemically resistant material is a field expedient way to limit the spread of contamination. Additionally, such material can be fastened between the troop compartment and the flight compartment to limit vapors from entering the compartment.

(4) In addition, any servicing or turn around of aircrafts suspected of being contaminated must be accompanied by CBRN monitoring.

f. Levels of Decontamination. Once a aircraft is contaminated it is difficult to decontaminate it completely. The tactical situation and the availability of aircraft will determine the degree of decontamination attempted. The goal of all decontamination efforts will be to reduce the hazard to the lowest possible level. Only specialist decontamination units, usually established in the rear area, will be able to conduct thorough decontamination to permit a reduction in protective clothing. It may be necessary to continue to operate aircrafts in a contaminated condition before they too can be subjected to decontamination procedures, but, in this event, all who may come into contact with contaminated aircrafts must be suitably attired and made aware of the conditions they face. Routine flight and ground operations with rotors turning help to decontaminate exterior surfaces of the aircraft; however, this could result in the ground contamination being transferred back onto the aircraft in a self-defeating process. The use of weathering should be applied whenever possible. Care must be taken not to spread contamination to clean parts of the aircraft. There are three options to be considered:

(1) Immediate Decontamination. The purpose of immediate decontamination is to save lives and minimize casualties. Initial effort will, therefore, be concentrated on personnel.

(2) Operational Decontamination. To enable operations to be sustained for longer periods it will be necessary for units to carry out operational decontamination of aircrafts in order to reduce further risks to personnel. Unit commanders should select sites dedicated to the decontamination of aircraft and organize them to take account of aircraft type, mission, terrain and wind conditions. If necessary, operational decontamination may be accomplished in two stages:

(a) Stage 1. Selected areas of the aircraft that are likely to be touched by personnel (landing gear, fuel ports, doors, steps, and hand holds) are decontaminated to limit the transfer and spread of contamination. Wash exterior surfaces with decontaminants to flush off contamination. Fuel, surfactant, and water are most commonly used. Ensure run-off is contained, appropriately marked and disposed of as contaminated waste.

(b) Stage 2. As soon as time and resources permit, all external and accessible internal surfaces may be decontaminated. The primary concern is to wash contaminants from the aircraft exterior and, as a minimum, the internal cabin floor. Ensure run-off is contained, appropriately marked and disposed of as contaminated waste.

(3) Thorough Decontamination. Thorough decontamination of aircrafts are best accomplished at sites in the rear area established by CBRN specialists. Thorough decontamination is a lengthy process, the aim of which is to reduce contamination to the lowest possible levels, thus permitting the partial or total removal of individual protection and the continuation of operations with minimum degradation. After deplaning of personnel and removal of role equipment, all parts of the aircraft including engine, transmission and equipment compartments must be checked and cleansed. Some panels and equipment will have to be removed and the aircraft must, therefore, be shut down.

g. Decontamination Guidance. Equipment will vary by nation but large quantities of water will be required. The most common decontamination procedure is to wash with hot water containing a surfactant followed by a clear water rinse, avoiding spraying water on electrical components. Water pressure should be adjusted to avoid damaging the aircraft. Hot air, if available, should be directed onto sensitive components that cannot be washed. Only approved cleaning compounds should be used. If pressurized water is used, all blanking plates should be in position and vulnerable apertures should be sealed.

(1) Standard Decontaminates. No effective chemical compound is available for full aircraft decontamination. Some decontaminants are not considered safe for use on aircraft. Units should exercise caution when selecting decontaminates.

(2) Expedient Decontaminates. Soap and water, kerosene, aircraft fuel and diesel fuels are approved as decontaminants on selected parts of the aircraft. Fuel is effective in removing some agents from aircraft skin and components; however, it does not neutralize the agents. If water is available, personnel should use it to rinse off the fuel. Many parts of the aircraft are delicate and cannot stand high pressure water or extreme hot air.

h. Site Requirements. The decontamination site must be capable of accommodating the appropriate aircraft type in the required numbers.

(1) It should be relatively secure but close enough to refueling and rearming points to permit a reasonably quick turn around if required.

(2) The site should have sufficient terrain flight routes to facilitate entry and exit.

(3) A slight slope to the terrain is desirable but must remain within aircraft limits.

(4) It is preferable to sequence groups of aircraft through the decontamination site to prevent arriving or departing aircraft interfering with decontamination operations.

(5) Depending on personnel and resources available, it may be possible to cleanse several aircraft simultaneously.

Table I-1. Generic Matrix for Aircraft/Payload Handling

Payload	Essential			Support			Retrograde		
Payload contamination status	Clean	LH	VH	Clean	LH	VH	Clean	LH	VH
Aircraft status	Clean								
Detection	X	X	X	X	X	X	X	X	X
Decontamination		X[1]			X			X	
Weathering		X[1]	X		X	X		X	X
Containerizing		X[1]			X				
Loading	X	X	X	X	X	X	X	X[2]	X[2]
Aircraft status	Contaminated								
Detection	X	X	X	X	X	X	X	X	X
Decontamination		X			X			X	
Weathering			X			X		X	X
Containerizing	X[1]			X			X	X	X
Loading	X	X	X	X	X	X	X	X[2]	X[2]

[1]Time permitting

[2]Only clearance (level 4) decontaminated

Supervisor Checklist

- ❑ Set up the CPCA areas and post instructions.
- ❑ Ensure decontaminant (e.g., filled shuffle box or pit) is at the entrances and exits of all areas.
- ❑ Ensure equipment (e.g. boxes or chairs) is available to allow decontamination of the underside of payload.
- ❑ Ensure containers are filled with expedient decontaminant.
- ❑ Ensure containers and liners are in each area for removed and/or discarded items.
- ❑ Identify the areas designated for contaminated waste and trash disposal, weathering, and pressure/hand decontamination.
- ❑ Ensure the areas where CPCA equipment and supplies are kept and the locations of all the CPCA areas are clearly marked.
- ❑ Ensure equipment and decontaminants are available to decontaminate the CPCA as necessary
- ❑ Establish a clean route to and from each area. Post instructions as needed.
- ❑ Coordinate with command and control authorities for required assistants:
  - ✓ Brief assistants and provide them with checklists.
  - ✓ Set work, rest, and replacement cycles for assistants.
  - ✓ Supervise assistants.
- ❑ Monitor and prompt CPCA users to:
  - ✓ Follow instructions.
  - ✓ Use contamination avoidance procedures whenever possible.
  - ✓ Maintain a steady processing flow.
- ❑ Restock the CPCA supplies.
- ❑ Decontaminate and clean the CPCA; remove contaminated items regularly.

Figure I-2. Sample Supervisor Checklist

Assistant Checklist

- ❑ Check payload for liquid contamination at CPCA entrance area.
- ❑ Segregate and move uncontaminated and vapor hazard only payload to waiting/loading area as appropriate for the situation.
- ❑ If liquid contaminated—
  - ✓ Move items to the LHA weathering area.
  - ✓ Place items for weathering far enough apart to allow all sides to aerate.
  - ✓ Remove tape, labels, and other disposable contaminated items from weathering equipment and sort as needed to ease a load identification.
  - ✓ Depending on payload, situation, and available equipment, routinely check for liquid contamination. Move to waiting/loading area as appropriate.
  - ✓ Clean the weathering area and remove trash.
- ❑ Move items that can be pressure or hand decontaminated using local resources to the pressure/hand decontamination area.
- ❑ Decontaminate liquid hazards with any available decontaminant. Apply with mops, brooms, brushes, or rags as appropriate. Avoid contact with contamination.
  - ✓ Monitor for liquid contamination.
  - ✓ Continue to decon as necessary. If no liquid contamination is found, remove payload to weathering, waiting or loading area according to the situation. Avoid contamination transfer. Rinse or brush off excess decontaminant.
- ❑ Clean, monitor, and decontaminate the LHA. Remove trash and contaminated items as necessary
- ❑ Keep decontaminant containers filled.
- ❑ Collect, bag, and dispose of contaminated waste items as appropriate.

Figure I-3. Sample Assistant Checklist

Aircrew Decontamination Checklist

- ❑ Aircrew life support personnel/equipment specialist will establish an aircrew contamination control area (ACCA) when directed.
- ❑ Aircrews will remain onboard until directed to the ACCA.
- ❑ Maintenance personnel will wipe down the hatch area to remove any liquid contamination.
- ❑ Aircrew personnel will be transported in a covered vehicle with all windows opened to aid in off-gassing.
- ❑ Aircrew personnel will be decontaminated in accordance with technical data/established procedures.
- ❑ Wastewater will be collected and disposed of in accordance with disposal plans.
- ❑ Contaminated equipment items will be decontaminated and/or collected for disposal. Items collected for disposal will be placed in sealed plastic bags.
- ❑ Life support/equipment specialists will return aircrews to a "ready-to-fly" status as soon as possible.
- ❑ Contaminated vehicles will not be used to transport clean crew members.
- ❑ All crew members will be seen by a medical specialist after processing through the ACCA.

Figure I-4. Sample Aircrew Decontamination Checklist

Mission-Essential Loading Checklist

- ❑ Monitor payload for contamination.
- ❑ Load liquid contaminated cargo if aircraft interior is already contaminated or restricted to operations in a contaminated area.
- ❑ If mission permits, decontaminate payload:
  - ✓ Weather in well ventilated, sunlit area.
  - ✓ Wash with a sodium hypochlorite solution (house hold bleach) or equivalent. Apply undiluted with brooms, brushes, mops, or rags. Allow 5 to 15 minute contact time before rinsing.
  - ✓ Load cargo whenever mission dictates, but consider maximizing ground time for payload decontamination to reduce risk to crew and aircraft.
- ❑ Monitor payload for liquid contamination.
- ❑ Decontaminate, seal, cover and/or containerize contaminated payload if mission permits.
- ❑ Monitor payload.
- ❑ Load payload as mission requires.
- ❑ Use in-flight decontamination checklist.

NOTE: Load cargo when monitoring determines no contact hazard is present.

Figure I-5. Sample Mission-Essential Loading Checklist

Mission Support Loading Checklist

- ❑ Monitor payload for contamination.
- ❑ Decontaminate payload as mission permits:
  - ✓ Weather in well-ventilated, sunlit area.
  - ✓ Wash with a sodium hypochlorite solution (household bleach) or equivalent.
  - ✓ Apply undiluted with brooms, brushes, or mops. Allow 5- to 15-minute contact time before rinsing.
- ❑ Monitor payload.
- ❑ Seal, cover, and/or containerize contaminated payload if mission permits.
- ❑ Monitor payload.
- ❑ Weather/wash and repalletize contaminated payload if mission permits.
- ❑ Redo checklist until contamination is a vapor hazard only, and then load payload.
- ❑ Use in-flight decontamination checklist.

NOTE: Load cargo anytime monitoring determines no contact hazard is present.

Figure I-6. Sample Mission Support Loading Checklist

Retrograde Loading Checklist

- ❑ Monitor payload for contamination.
- ❑ Weather and wash contaminated payload until no contamination is detected.
- ❑ Monitor payload.
- ❑ Move decontaminated payload to wind-sheltered area and monitor.
- ❑ If liquid contamination is found, return to Step 2.
- ❑ If vapor contamination is found, allow payload to off-gas and return to Step 4.

NOTEL Load cargo anytime monitoring determines no vapor or contact contamination is present.

Figure I-7. Sample Retrograde Loading Checklist

In-Flight Decontamination Checklist for Maximum Decontamination of Payload

- ❑ Purge aircraft using standard smoke and fume elimination procedures (10,000 to 13,000 feet above mean sea level [MSL]).
- ❑ Stop smoke and fume elimination procedures for 45 minutes chemical concentrating time, maintaining maximum heat setting for cargo and passengers
- ❑ Monitor for contamination using chemical-agent vapor detector. Operators must wear full chemical protective equipment.
- ❑ Continue hourly purge/concentrating monitor cycles until no vapor contamination is detected.
- ❑ If no contamination is detected, personnel may remove below-the-shoulder chemical protection.

Continue to check for vapor contamination every 60 minutes.

Figure I-8. Sample In-Flight Decontamination Checklist for Maximum Decontamination of Payload

In-Flight Decontamination Checklist
for Minimum Contamination of Aircraft

- ❑ Use auxiliary ventilation procedures to minimize vapor hazards and vapor adsorption into the aircraft.
- ❑ Keep the payload as cold as possible throughout the flight using the environmental systems.
- ❑ Mission permitting, fly at an appropriate altitude to reduce the temperature for the duration of the flight.

Figure I-9. Sample In-Flight Decontamination Checklist for Minimum Contamination of Aircraft

Appendix J

INSTALLATION CBRN DEFENSE CAPABILITY PACKAGES

1. Tiered Approach to Installation CBRN Defense Capabilities

Installations implement a combination of manning, training, and equipping the response force for CBRN defense on a graduated scale based on priority. This approach is flexible enough to accommodate the needs of specific installations, while standardizing major system elements to provide cost effective solutions. Installations will be assigned one of three priorities - Tier 0, Tier 1, or Tier 2 – to align with capabilities outlined in DoDI 2000.18.

2. Tier 0 – Baseline Capability Package

a. Tier 0 (baseline capability) establishes the foundation for installations to maintain a standard level of preparedness. This tier applies to all installations, including those without critical or strategic operational missions or capabilities, such as training bases. Baseline capabilities primarily focus on training, planning, exercises, and doctrine/policy. This includes focusing on interoperability with local and HN responders. This tier assumes that the installation has limited emergency and HAZMAT response, EMS, and installation law enforcement capabilities. Emergency operations capabilities are ad hoc and not considered robust, exercised, or resourced.

b. The baseline capabilities are the lowest level of acceptable capability for military installations and facilities. Awareness is the lowest common level of preparedness that installations must be capable of to establish a standard set of capabilities among military installations and facilities, regardless of service or DoD efforts to prioritize them. A brief description of these is provided below. Training includes providing computer-based training products for:

- CBRN awareness for the installation population.
- CBRN incident response and management tailored for command staff, law enforcement/ security personnel, firefighters, specialized CBRN responders, and medical personnel.

c. Baseline capabilities establish a foundation for commanders to implement in tactical environments during operational deployments into a theater of operations.

3. Tier 1 – Enhanced Capability Package

a. Tier 1 (enhanced capability) focuses on providing critical missions and increasing emergency responders' ability to respond to and operate in CBRN environments. This tier is not directly influenced by the existence of critical missions but does provide basic capabilities.

b. The Tier 1 capability package includes Baseline capabilities augmented by the following:

- Detection equipment for detecting, identifying, and sampling CBRN materials – to include handheld detectors and field analysis/characterization equipment.
- Emergency responder equipment. Includes HAZMAT ensembles (Levels A, B, and C), respiratory protection equipment (self-contained breathing apparatus and positive-pressure masks), PPE, and related support equipment. This equipment provides alarming dosimeters for exposure control and medical countermeasures. This equipment is for emergency responder use only.
- Mass casualty support. Includes decontamination showers and tents, decontaminants, litters, and support equipment.
- Miscellaneous HAZMAT response equipment. Includes equipment for communications, on-scene meteorological data, HAZMAT team support, and marking and controlling hazards.
- Mass notification system, to be focused on major populated areas (e.g., dormitories, , industrial areas, etc.). System design and installation is dependent on the geography and communication infrastructure resident on each installation. Typical mass notification technologies include Giant Voice, telephone alerting systems, tone alert radios, and network pop-ups.
- Decision Support Tools (DSTs). Includes handheld computers with incident management software for on-scene use, computers with hazard modeling and incident management software for Emergency Operations Center use, and other HAZMAT reference materials.
- Training for Tier 1 installations, consisting of on-site and computer-based training for all new capabilities. The parent Service or agency will coordinate with the program on the best training approach for their installations.

4. Tier 2 – Advanced Capability Package

a. Tier 2 (advanced capability) provides advanced capabilities to installations. This tier gives critical missions and installation emergency responders the greatest latitude in responding to CBRN incidents. Tier 2 is directly influenced by the criticality of an installation or facility and assumes that the nature of the mission requires the mitigation or acceptance of minimal risk. Tier 2 is parallel to a technician level of HAZMAT capability on the installation.

b. The Tier 2 capability package includes Baseline and Tier 1 capabilities augmented by the following:

- Chemical detectors for TIMs and warfare agents will be placed around critical mission areas and networked to the DSS and COLPRO systems.
- Biological collection devices will be placed around critical mission areas, and samples will be collected daily. Samples will be analyzed in accordance with DoD and Centers for Disease Control and Prevention guidelines and in the most cost-effective manner possible.
- Critical mission facilities (up to 10,000 square feet) will be collectively protected to ensure mission continuity.
- Escape masks will be available to reduce the risk of injury to personnel working in COLPRO.

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GLOSSARY

PART I—ABBREVIATIONS AND ACRONYMS

A

AAR	after-action review
AEP	Allied Engineering Publication
AFB	Air Force base
AFMAN	Air Force manual
AFRRI	Armed Forces Radiobiology Research Institute
AG	adjutant general
AL	Alabama
ALARA	as low as reasonably achievable
AML	area medical laboratory
AR	Army regulation
AO	area of operations
AOI	area of interest
AOR	area of responsibility
ASR	atmosphere-supplying respirator
AT	antiterrorism
ATP	allied tactical publication
ATTN	attention
AWACS	Airborne Warning and Control System

B

BAT	Biological Augmentation Team
BDRD	Biological Defense Research Directorate
BEE	bioenvironmental engineer
BW	biological warfare

C

C	Celsius
C2	command and control
C4I	command, control, communications, computers, and intelligence
CAM	chemical-agent monitor
CB	chemical-biological
CBPS	chemical biological protective shelter
CBR	chemical, biological, and radiological
CBRN	CBRN
CBRNE	chemical, biological, radiological, nuclear, and high-yield explosives
CBRNWRS	CBRN Warning and Reporting System

CCA	contamination control area
CCIR	commander's critical information requirements
CDC	Centers for Disease Control and Prevention
CDF	contractors deploying with the force
CFR	Code of Federal Regulations
CG	commanding general
CHPPM	US Army Center for Health Promotion and Preventive Medicine
CID	Criminal Investigation Division
CJCS	Chairman of the Joint Chiefs of Staff
CM	consequence management
CMAT	Consequence Management Advisory Team
CMT	crisis management team
COA	course of action
COCOM	combatant command
COLPRO	collective protection
COMM	communications
CONEX	container express
CONPLAN	concept plan
CONOPS	concept of operations
CONUS	continental United States
COP	common operational picture
COSC	combat and operational stress control
COSR	combat and operational stress reaction
CP	counterproliferation
CPDEPMEDS	Chemically Protected Deployable Medical System
CPEMEDS	Collectively Protected Expeditionary Medical Support
CRAF	Civil Reserve Air Fleet
CST	civil support team
CW	chemical warfare

D

DA	Department of the Army
DCO	defense coordinating officer
DD	Department of Defense
DHS	Department of Homeland Security
DOD	Department of Defense
DODD	Department of Defense directive
DODI	Department of Defense instruction
DOS	Department of State
DST	decision support tool
DTRA	Defense Threat Reduction Agency

E

EMS	emergency medical services
EMT	emergency medical technician
EOC	emergency operations center
EOD	explosive ordnance disposal
EPA	Environmental Protection Agency
ERG	Emergency Response Guidebook
ESF	emergency support function

F

F	Fahrenheit
FBI	Federal Bureau of Investigation
FDPMU	Forward-Deployable Preventive Medicine Unit
FEMA	Federal Emergency Management Agency
FHP	force health protection
FL	Florida
FM	field manual (Army)
FMFM	Fleet Marine Force Manual
FOE	follow-on element
FOV	field of view
FP	force protection
FPCON	force protection condition

H

HAZMAT	hazardous materials
HEPA	high-efficiency particulate air
HHS	Health and Human Services
HN	host nation
HNS	host nation support
HQ	headquarters
HR	hour(s)
HSAS	Homeland Security Advisory System
HTH	high-test hypochlorite
HVAC	heating, ventilation, and air conditioning
HVT	high-value target

I

IAP	incident action plan
IC	incident commander
ICAM	improved chemical agent monitor
ICP	incident control point
ICS	incident command system
IDLH	immediately dangerous to life or health

IED	improvised explosive device
IIMG	Interagency Incident Management Group
IM	information management
IMS	Incident Management System
IPB	intelligence preparation of the battlespace
IPE	individual protective equipment
IRT	incident response team

J

JA	judge advocate
JAG	Judge Advocate General
JBAIDS	Joint Biological Agent Identification and Diagnostic System
JBPDS	Joint Biological Point Detection System
JF	joint force
JFC	joint force commander
JFO	joint field office
JP	joint publication
JRC	Joint Reception Center
JRO	Joint Requirement Office
JRSOI	joint reception, staging, onward movement, and integration
JSLIST	Joint Service Lightweight Integrated Suit Technology
JSTARS	Joint Surveillance Target Attack Radar System
JTF	joint task force
JTTP	joint tactics, techniques, and procedures
JWARN	Joint Warning and Reporting Network

K

k	kilo
kg	kilogram(s)
km	kilometer(s)
kph	kilometers per hour

L

LEA	law enforcement agency
LFA	lead federal agency
LLR	low-level radiation
LOTS	logistics over-the-shore
LOC	line of communications
LRN	Laboratory Response Network

M

m	meter(s)
m^2	square meters
MAA	mutual aid agreement
MADCP	mortuary affairs decontamination collection point
MARS	Military Affiliate Radio System
MASCAL	mass casualty
MANSCEN	Maneuver Support Center
MCC	mission control center
MCCDC	Marine Corps Combat Development Command
MCHT	modular chemically hardened tent
MCPS	modular command post system
MCRP	Marine Corps reference publication
MCWP	Marine Corps Warfighting Publication
MD	Maryland
MEDLOG	medical logistics
MEDSURV	medical surveillance
MET	meteorological
mg	milligram(s)
MGPTS	modular general-purpose tent system
mi	mile(s)
MILSTRIP	Military Standard Requisitioning and Issue Procedures
MILVAN	Military van (container)
min	Minute(s)
MO	Missouri
MOA	memorandum of agreement
MOB	main operations base
MOPP	mission-oriented protective posture
MOU	memorandum of understanding
MSDS	Material Safety Data Sheet
MTF	medical treatment facility
MTTP	multiservice tactics, techniques, and procedures

N

NAAK	nerve agent antidote kit
NAERG	North America Emergency Response Guide
NATO	North Atlantic Treaty Organization
CBRN	chemical, biological, radiological, and nuclear
NBI	nonbattle injury
NCIS	Naval Criminal Investigative Service
NDVECC	Navy Disease Vector Ecology Control Center
NEHC	Navy Environmental Health Center
NEO	noncombatant evacuation operation
NEPMU	Navy Environmental and Preventive Medicine Unit
NFPA	National Fire Protection Association
NG	National Guard

NGO	nongovernmental organization
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NMRC	Navy Medical Research Center
NRC	National Response Center
NRCC	National Response Coordination Center
NRP	National Response Plan
NWDC	Navy Warfare Development Command
NWP	Navy Warfare Publication

O

OEG	operational exposure guide
OEH	occupational and environmental health
OPCEN	operations center
OPCON	operational control
OCONUS	outside the continental United States
OPLAN	operation plan
OPNAVINST	Office of the Chief of Naval Operations Instruction
OPORD	operation order
OPR	office of primary responsibility
OPREP	operational report
OPSEC	operations security
OSC	on-scene commander
OSHA	Occupational Safety and Health Administration
OSI	Office of Special Investigations

P

PHEO	public health emergency officer
PIR	priority intelligence requirement
PNT	positioning, navigation and timing
POC	point of contact
POD	port of debarkation
POE	port of embarkation
POL	petroleum, oil, and lubricants
POM	program objective memorandum
PPE	personal protective equipment
PPW	patient protective wrap
PVNTMED	preventive medicine

Q

QRF	quick response force

R

RDD	radiological dispersal device
RFA	request for assistance
RI	Rhode Island
RM	risk management
ROM	restriction of movement
ROTA	release other than attack
RRCC	Regional Response Coordination Center

S

S2	battalion or brigade intelligence staff officer
SA	situational awareness
SBCCOM	United States Army Soldier and Biological Chemical Command
SCBA	self-contained breathing apparatus
SecDef	Secretary of Defense
SIP	shelter in place
SITREP	situation report
SJA	staff judge advocate
SME	subject matter expert
SOFA	status-of-forces agreement
SOP	standard operating procedure
SPOD	seaport of debarkation
SPOE	seaport of embarkation
STANAG	standardization agreement

T

TBM	theater ballistic missile
TCN	third country national
TEMPER	tent, extendable, modular, personnel
TFA	toxic-free area
TIC	toxic industrial chemicals
TIM	toxic industrial material
TM	technical manual
TRADOC	United States Army Training and Doctrine Command
TSP	training support package
TTP	tactics, techniques, and procedures
TX	Texas

U

UAV	unmanned aircraft system
UC	Unified Command
US	United States
USA	United States Army

USACMLS	United States Army Chemical School
USAF	United States Air Force
USAMRICD	US Army Medical Research Institute for Chemical Defense
USAMRIID	United States Army Medical Research Institute of Infectious Diseases
USC	United States Code
USCG	United States Coast Guard
USG	United States Government
USMC	United States Marine Corps
USN	United States Navy
UTC	unit-type code

V

VA	Virginia, vulnerability assessment

W

WG	working group
WMD	weapons of mass destruction

PART II—TERMS AND DEFINITIONS

accidental attack An unintended attack which occurs without deliberate national design as a direct result of a random event, such as a mechanical failure, a simple human error, or an unauthorized action by a subordinate. (JP 1-02)

active defense The employment of limited offensive action and counterattacks to deny a contested area or position to the enemy. (JP 1-02)

air control operations (DOD) The employment of air forces, supported by ground and naval forces, as appropriate, to achieve military objectives in vital airspace areas. Such operations include destruction of enemy air and surface-to-air forces, interdiction of enemy air operations, protection of vital air lines of communications, and the establishment of local military superiority in areas of air operations. (JP 1-02)

aircrew contamination control area (ACCA) Designated area where aircrew personnel will be decontaminated. (AFMAN 10-2602)

antiterrorism Defensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include limited response and containment by local military forces. Also called AT. (JP 1-02)

area assessment The commander's prescribed collection of specific information that commences upon employment and is a continuous operation. It confirms, corrects, refutes, or adds to previous intelligence acquired from area studies and other sources prior to employment. (JP 3-05)

area of influence (DOD, NATO) A geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control. (JP 1-02)

area of interest (DOD) That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory to the objectives of current or planned operations. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. Also called AOI. (JP 1-02)

area of operations (DOD) An operational area defined by the joint force commander for land and naval forces. Areas of operation do not typically encompass the entire operational area of the joint force commander, but should be large enough for component commanders to accomplish their missions and protect their forces. Also called AO. (JP 1-02)

area of responsibility (DOD) The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. Also called AOR. (JP 3-0)

assembly area 1. An area in which a command is assembled preparatory to further action. 2. In a supply installation, the gross area used for collecting and combining components into complete units, kits, or assemblies. (JP 1-02)

assessment 1. Analysis of the security, effectiveness, and potential of an existing or planned intelligence activity. 2. Judgment of the motives, qualifications, and characteristics of present or prospective employees or "agents." (JP 1-02)

ballistic missile Any missile which does not rely upon aerodynamic surfaces to produce lift and consequently follows a ballistic trajectory when thrust is terminated.

base (DOD, NATO) 1. A locality from which operations are projected or supported. 2. An area or locality containing installations which provide logistic or other support. 3. (DOD only) Home airfield or home carrier. (JP 1-02)

biological agent A microorganism that causes disease in personnel, plants, or animals or causes the deterioration of materiel. (JP 1-02)

biological defense The methods, plans, and procedures involved in establishing and executing defensive measures against attacks using biological agents. (JP 1-02)

biological environment Conditions found in an area resulting from direct or persisting effects of biological weapons. (JP 1-02)

biological weapon An item of materiel which projects, disperses, or disseminates a biological agent including arthropod vectors. (JP 1-02)

capability The ability to execute a specified course of action. (A capability may or may not be accompanied by an intention.) (JP 1-02)

casualty Any person who is lost to the organization by having been declared dead, duty status – whereabouts unknown, missing, ill, or injured. (JP 1-02)

chemical agent Any toxic chemical intended for use in military operations. (JP 1-02)

CBRN defense Efforts to protect personnel on military installations and facilities from CBRN incidents. Also called CBRN defense. (JP 1-02)

chemical, biological, radiological, nuclear, or high-yield explosives incidents (DOD) An emergency resulting from the deliberate or unintentional, release of nuclear, biological, radiological, or toxic or poisonous chemical materials, or the detonation of a high-yield explosive. (FM 1-02)

chemical defense The methods, plans, and procedures involved in establishing and executing defensive measures against attack utilizing chemical agents. (JP 1-02)

chemical operation Employment of chemical agents to kill, injure, or incapacitate for a significant period of time, man or animals, and deny or hinder the use of areas, facilities, or materiel; or defense against such employment. (JP 1-02)

chemical survey The directed effort to determine the nature and degree of chemical hazard in an area and to delineate the perimeter of the hazard area. (JP 1-02)

chemical warfare All aspects of military operations involving the employment of lethal and incapacitating munitions/ agents and the warning and protective measures associated with such offensive operations. Since riot control agents and herbicides are not considered to be chemical warfare agents, those two items will be referred to separately or under the broader term "chemical," which will be used to include all types of chemical munitions/ agents collectively. Also called CW. (JP 1-02)

chemical weapon Together or separately, (a) a toxic chemical and its precursors, except when intended for a purpose not prohibited under the Chemical Weapons Convention; (b) a munition or device, specifically designed to cause death or other harm through toxic properties of those chemicals specified in (a), above, which would be released as a result of the employment of such munition or device; (c) any equipment specifically designed for use directly in connection with the employment of munitions or devices specified in (b), above. (JP 1-02)

civil defense All those activities and measures designed or undertaken to: a. minimize the effects upon the civilian population caused or which would be caused by an enemy attack on the United States; b. deal with the immediate emergency conditions that would be created by any such attack; and c. effectuate emergency repairs to, or the emergency restoration of, vital utilities and facilities destroyed or damaged by any such attack. (JP 1-02)

combatant command A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 1-02)

command 1. The authority that a commander in the Armed Forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel. 2. An order given by a commander; that is, the will of the commander expressed for the purpose of bringing about a particular action. 3. A unit or units, an organization, or an area under the command of one individual. (JP 1-02)

command and control The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a

commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Also called C2. (JP 1-02)

commander's critical information requirements A comprehensive list of information requirements identified by the commander as being critical in facilitating timely information management and the decision making process that affect successful mission accomplishment. The two key subcomponents are critical friendly force information and priority intelligence requirements. Also called CCIR. (JP 1-02)

common operational picture A single identical display of relevant information shared by more than one command. A common operational picture facilitates collaborative planning and assists all echelons to achieve situational awareness. Also called COP. (JP 1-02)

concept of operations A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. Also called CONOPS. (JP 1-02)

concept plan In the context of joint operation planning level 3 planning detail, an operation plan in an abbreviated format that may require considerable expansion or alteration to convert it into a complete operation plan or operation order. Also called CONPLAN. (JP 1-02)

consequence management Actions taken to maintain or restore essential services and manage and mitigate problems resulting from disasters and catastrophes, including natural, manmade, or terrorist incidents. Also called CM. (JP 1-02)

contaminated payload control area (CPCA) An area in which payload contamination control is effected.

containerize To fully encapsulate or enclose an item. A completely airtight enclosure. All such enclosures should be clearly marked to denote the hazard according to International Air Transport Association (IATA) regulations and Emergency Response Guide (ERG) (latest version).

continental United States United States territory, including the adjacent territorial waters, located within North America between Canada and Mexico. Also called CONUS. (JP 1-02)

course of action 1. Any sequence of activities that an individual or unit may follow. 2. A possible plan open to an individual or commander that would accomplish, or is related to the accomplishment of the mission. 3. The scheme adopted to accomplish a job or mission. 4. A line of conduct in an engagement. 5. A product of the Joint Operation Planning and Execution System concept development phase. Also called COA. (JP 1-02)

critical information (DOD) Specific facts about friendly intentions, capabilities, and activities vitally needed by adversaries for them to plan and act effectively so as to guarantee failure or unacceptable consequences for friendly mission accomplishment. (JP 1-02)

debarkation The unloading of troops, equipment, or supplies from a ship or aircraft. (JP 1-02)

decontamination The process of making any person, object, or area safe by absorbing, destroying, neutralizing, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it. (JP 1-02)

decontamination zone An area for effecting the process of making any person or object safe by destroying, neutralizing, making harmless, or removing contamination from payloads prior to aircraft loading.

deliberate attack A type of offensive action characterized by preplanned coordinated employment of firepower and maneuver to close with and destroy or capture the enemy. (JP 1-02)

Department of the Army The executive part of the Department of the Army at the seat of government and all field headquarters, forces, Reserve Components, installations, activities, and functions under the control or supervision of the Secretary of the Army. Also called DA. (JP 1-02)

detection 1. In tactical operations, the perception of an object of possible military interest but unconfirmed by recognition. 2. In surveillance, the determination and transmission by a surveillance system that an event has occurred. 3. In arms control, the first step in the process of ascertaining the occurrence of a violation of an arms control agreement. 4. In chemical, biological, radiological, and nuclear (CBRN) environments, the act of locating CBRN hazards by use of CBRN detectors or monitoring and/ or survey teams. (JP 1-02)

directive 1. A military communication in which policy is established or a specific action is ordered. 2. A plan issued with a view to putting it into effect when so directed, or in the event that a stated contingency arises. 3. Broadly speaking, any communication which initiates or governs action, conduct, or procedure. (JP 1-02)

embarkation The process of putting personnel and/ or vehicles and their associated stores and equipment into ships and/ or aircraft. (JP 1-02)

emergency-essential employee A Department of Defense civilian employee whose assigned duties and responsibilities must be accomplished following the evacuation of non-essential personnel (including dependents) during a declared emergency or outbreak of war. The position occupied cannot be converted to a military billet because it requires uninterrupted performance so as to provide immediate and continuing support for combat operations and/ or combat systems support functions. (JP 1-02)

en route care Continuation of the provision of care during movement (evacuation) between the health service support capabilities in the continuum of care, without clinically compromising the patient's condition. (JP 1-02)

entrance zone An area designated for entering a contaminated payload control area.

evacuation 1. The process of moving any person who is wounded, injured, or ill to and/ or between medical treatment facilities. 2. The clearance of personnel, animals, or materiel from a given locality. 3. The controlled process of collecting, classifying, and shipping unserviceable or abandoned materiel, US or foreign, to appropriate reclamation, maintenance, technical intelligence, or disposal facilities. 4. The ordered or authorized departure of noncombatants from a specific area by Department of State, Department of Defense, or appropriate military commander. This refers to the movement from one area to another in the same or different countries. The evacuation is caused by unusual or emergency circumstances and applies equally to command or non-command sponsored family members. (JP 1-02)

exercise A military maneuver or simulated wartime operation involving planning, preparation, and execution. It is carried out for the purpose of training and evaluation. It may be a multinational, joint, or single-Service exercise, depending on participating organizations. (JP 1-02)

explosive ordnance All munitions containing explosives, nuclear fission or fusion materials, and biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket, and small arms ammunition; all mines, torpedoes, and depth charges; demolition charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components explosive in nature. (JP 1-02)

explosive ordnance disposal The detection, identification, on-site evaluation, rendering safe, recovery, and final disposal of unexploded explosive ordnance. It may also include explosive ordnance which has become hazardous by damage or deterioration. Also called EOD. (JP 1-02)

field of view 1. In photography, the angle between two rays passing through the perspective center (rear nodal point) of a camera lens to the two opposite sides of the

format. Not to be confused with "angle of view." 2. The total solid angle available to the gunner when looking through the gunsight. Also called FOV. (JP 1-02)

force health protection Measures to promote, improve, or conserve the mental and physical wellbeing of Service members. These measures enable a healthy and fit force, prevent injury and illness, and protect the force from health hazards. Also called FHP. (JP 1-02)

force protection Actions taken to prevent or mitigate hostile actions against Department of Defense personnel (to include family members), resources, facilities, and critical information. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease. Also called FP. (JP 1-02)

force protection condition (DOD) A Chairman of the Joint Chiefs of Staff-approved program standardizing the Military Services' identification of and recommended responses to terrorist threats against US personnel and facilities. This program facilitates inter-Service coordination and support for antiterrorism activities. Also called FPCON. There are four FPCONs above normal. a. FPCON ALPHA -- This condition applies when there is a general threat of possible terrorist activity against personnel and facilities, the nature and extent of which are unpredictable, and circumstances do not justify full implementation of FPCON BRAVO measures. However, it may be necessary to implement certain measures from higher FPCONs resulting from intelligence received or as a deterrent. The measures in this FPCON must be capable of being maintained indefinitely. b. FPCON BRAVO--This condition applies when an increased and more predictable threat of terrorist activity exists. The measures in this FPCON must be capable of being maintained for weeks without causing undue hardship, affecting operational capability, and aggravating relations with local authorities. c. FPCON CHARLIE--This condition applies when an incident occurs or intelligence is received indicating some form of terrorist action against personnel and facilities is imminent. Implementation of measures in this FPCON for more than a short period probably will create hardship and affect the peacetime activities of the unit and its personnel. d. FPCON DELTA--This condition applies in the immediate area where a terrorist attack has occurred or when intelligence has been received that terrorist action against a specific location or person is likely. Normally, this FPCON is declared as a localized condition. (JP 1-02)

host nation (DOD) A nation that receives the forces and/or supplies of allied nations, coalition partners, and/or NATO organizations to be located on, to operate in, or to transit through its territory. Also called HN. (JP 1-02)

host-nation support (DOD) Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations. Also called HNS. (JP 1-02)

host-nation support agreement (DOD) Basic agreement normally concluded at government-to-government or government-to-combatant commander level. These agreements may include general agreements, umbrella agreements, and memoranda of understanding. (JP 1-02)

improvised explosive device A device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and designed to destroy, incapacitate, harass, or distract. It may incorporate military stores, but is normally devised from nonmilitary components. Also called IED. (JP 1-02)

individual protective equipment In chemical, biological, radiological, and nuclear warfare, the personal clothing and equipment required to protect an individual from biological and chemical hazards and some nuclear effects. Also called IPE. (JP 1-02)

in-flight decontamination An accelerated vaporisation of volatile contaminants using a forced ventilation method to reduce aircraft interior contamination through the repeated use of smoke and fume elimination procedures.

installation (DOD) A grouping of facilities, located in the same vicinity, which support particular functions. Installations may be elements of a base. (JP 1-02)

joint doctrine Fundamental principles that guide the employment of forces of two or more Military Departments in coordinated action toward a common objective. It is authoritative; as such, joint doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. It will be promulgated by or for the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands and Services. (JP 1-02)

joint force A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments operating under a single joint force commander. (JP 1-02)

joint force commander A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called JFC. (JP 1-02)

joint publication A publication containing joint doctrine that is prepared under the direction and authority of the Chairman of the Joint Chiefs of Staff and applies to all Armed Forces of the United States. Also called JP. See also Chairman of the Joint Chiefs of Staff instruction; Chairman of the Joint Chiefs of Staff manual; joint doctrine; joint test publication. (JP 1-02)

joint rear area operations (DOD) Those operations in the joint rear area that facilitate protection or support of the joint force.

joint rear area (DOD) A specific land area within a joint force commander's operational area designated to facilitate protection and operation of installations and forces supporting the joint force. Also called JRA.

joint tactics, techniques, and procedures The actions and methods that implement joint doctrine and describe how forces will be employed in joint operations. They are authoritative; as such, joint tactics, techniques, and procedures will be followed except

when, in the judgment of the commander, exceptional circumstances dictate otherwise. They will be promulgated by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands and Services. Also called JTTP.

joint task force A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called JTF. (JP 1-02)

law enforcement agency Any of a number of agencies (outside the Department of Defense) chartered and empowered to enforce US laws in the following jurisdictions: The United States, a state (or political subdivision) of the United States, a territory or possession (or political subdivision) of the United States, or within the borders of a host nation. Also called LEA. (JP 1-02)

liquid hazard area (LHA) An area in a contaminated payload control area where both liquid and vapor chemical warfare agents may exist.

loading zone An area for loading decontaminated payloads onto aircraft.

low level Refers to hazard levels that are not expected to produce health effects of significant physiological impact and thus would not pose notable (operational) impact.

main operations base (DOD) In special operations, a base established by a joint force special operations component commander or a subordinate special operations component commander in friendly territory to provide sustained command and control, administration, and logistical support to special operations activities in designated areas. Also called MOB. (JP 1-02)

marshaling zone An area for assembling, holding, and organizing supplies, equipment, and/or vehicles for onward movement.

mass casualty Any large number of casualties produced in a relatively short period of time, usually as the result of a single incident such as a military aircraft accident, hurricane, flood, earthquake, or armed attack that exceeds local logistic support capabilities. Also called MASCAL. (JP 1-02)

medical surveillance The ongoing, systematic collection of health data essential to the evaluation, planning, and implementation of public health practice, closely integrated with timely dissemination of data as required by higher authority. Also called MEDSURV. (JP 1-02)

military van (container) Military-owned, demountable container, conforming to US and international standards, operated in a centrally controlled fleet for movement of military cargo. Also called MILVAN. (JP 1-02)

mission essential payloads Payloads that must move under any circumstance (i.e., wounded personnel, weapon systems, munitions, or classified material).

mission support payloads Payloads that can wait until contamination control procedures have reduced contamination to a vapor-only hazard as determined by available detection methods.

mutual support (DOD, NATO) That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities. (JP 1-02)

negligible risk An insignificant amount of risk for conducting military operations. A degree of risk where personnel are reasonably safe.

nonbattle injury A person who becomes a casualty due to circumstances not directly attributable to hostile action or terrorist activity. Also called NBI. (JP 1-02)

noncombatant evacuation operations Operations directed by the Department of State, the Department of Defense, or other appropriate authority whereby noncombatants are evacuated from foreign countries when their lives are endangered by war, civil unrest, or natural disaster to safe havens or to the United States. Also called NEOs. (JP 1-02)

on-scene commander 1. The person designated to coordinate the rescue efforts at the rescue site. 2. Federal officer designated to direct federal crisis and consequence management efforts at the scene of a terrorist or weapons of mass destruction incident. Also called OSC. (JP 1-02)

operational area An overarching term encompassing more descriptive terms for geographic areas in which military operations are conducted. Operational areas include, but are not limited to, such descriptors as area of responsibility, theater of war, theater of operations, joint operations area, amphibious objective area, joint special operations area, and area of operations. Also called OA. (JP 1-02)

operational control Command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority) and may be delegated within the command. When forces are transferred between combatant commands, the command relationship the gaining commander will exercise (and the losing commander will relinquish) over these forces must be specified by the Secretary of Defense. Operational control is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/ or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions; it does not, in and of itself, include authoritative

direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. (JP 1-02)

operational decontamination Decontamination carried out by an individual and/or a unit, restricted to specific parts of operationally essential equipment, materiel and/or working areas, in order to minimize contact and transfer hazards and to sustain operations. This may include decontamination of the individual beyond the scope of immediate decontamination, as well as decontamination of mission-essential spares and limited terrain decontamination. (JP 1-02)

operational environment A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 1-02)

operations center (DOD) The facility or location on an installation, base, or facility used by the commander to command, control, and coordinate all crisis activities. Also called OC. (JP 1-02)

operations security A process of identifying critical information and subsequently analyzing friendly actions attendant to military operations and other activities to: a. identify those actions that can be observed by adversary intelligence systems; b. determine indicators that hostile intelligence systems might obtain that could be interpreted or pieced together to derive critical information in time to be useful to adversaries; and c. select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation. Also called OPSEC. (JP 1-02)

passive defense Measures taken to reduce the probability of and to minimize the effects of damage caused by hostile action without the intention of taking the initiative. (JP 1-02)

port of debarkation (DOD) The geographic point at which cargo or personnel are discharged. This may be a seaport or aerial port of debarkation; for unit requirements; it may or may not coincide with the destination. Also called POD. (JP 1-02)

port of embarkation (DOD) The geographic point in a routing scheme from which cargo or personnel depart. This may be a seaport or aerial port from which personnel and equipment flow to a port of debarkation; for unit and non-unit requirements, it may or may not coincide with the origin. Also called POE. (JP 1-02)

port security (DOD, NATO) The safeguarding of vessels, harbors, ports, waterfront facilities, and cargo from internal threats such as destruction, loss, or injury from sabotage or other subversive acts; accidents; thefts; or other causes of similar nature. (JP 1-02)

port support activity (DOD) A tailorable support organization composed of mobilization station assets that ensures the equipment of the deploying units is ready to load. The port support activity (PSA) operates unique equipment in conjunction with

ship loading operations. The PSA is operationally controlled by the military port commander or terminal transfer unit commander. Also called PSA. (JP 1-02)

pre-position To place military units, equipment, or supplies at or near the point of planned use or at a designated location to reduce reaction time, and to ensure timely support of a specific force during initial phases of an operation. (JP 1-02)

preventive medicine The anticipation, communication, prediction, identification, prevention, education, risk assessment, and control of communicable diseases, illnesses and exposure to endemic, occupational, and environmental threats. These threats include nonbattle injuries, combat stress responses, weapons of mass destruction, and other threats to the health and readiness of military personnel. Communicable diseases include anthropod-, vector-, food-, waste-, and waterborne diseases. Preventative medicine measures include field sanitation, medical surveillance, pest and vector control, disease risk assessment, environmental and occupational health surveillance, waste (human, hazardous, and medical) disposal, food safety inspection, and potable water surveillance. Also called PVNTMED. (JP 1-02)

priority intelligence requirement An intelligence requirement, stated as a priority forintelligence support, that the commander and staff need to understand the adversary or the operational environment. Also called PIR. (JP 1-02)

reconnaissance A mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. Also called recon. (JP 1-02)

retrograde payloads Payloads that will move only when the payload is contamination-free as determined by local detection methods.

risk assessment The identification and assessment of hazards (first two steps of risk management process). (JP 1-02)

risk management The process of identifying, assessing, and controlling risks arising from operational factors and making decisions that balance risk cost with mission benefits. Also called RM. (JP 1-02)

status-of-forces agreement An agreement that defines the legal position of a visiting military force deployed in the territory of a friendly state. Agreements delineating the status of visiting military forces may be bilateral or multilateral. Provisions pertaining to the status of visiting forces may be set forth in a separate agreement, or they may form a part of a more comprehensive agreement. These provisions describe how the authorities of a visiting force may control members of that force and the amenability of the force or its members to the local law or to the authority of local officials. To the extent that agreements delineate matters affecting the relations between a military force and civilian authorities and population, they may be considered as civil affairs agreements. Also called SOFA.

support 1. The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action. 2. A unit that helps another unit in battle. 3. An element of a command that assists, protects, or supplies other forces in combat. (JP 1-02)

surveillance The systematic observation of aerospace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means. (JP 1-02)

survey The directed effort to determine the location and the nature of a chemical, biological, and radiological hazard in an area. (JP 1-02)

sustainment The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment of the mission. (JP 1-02)

terrorism The calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological. (JP 1-02)

thorough decontamination Decontamination carried out by a unit, with or without external support, to reduce contamination on personnel, equipment, materiel, and/ or working areas equal to natural background or to the lowest possible levels, to permit the partial or total removal of individual protective equipment and to maintain operations with minimum degradation. This may include terrain decontamination beyond the scope of operational decontamination. (JP 1-02)

threat analysis In antiterrorism, a continual process of compiling and examining all available information concerning potential terrorist activities by terrorist groups which could target a facility. A threat analysis will review the factors of a terrorist group's existence, capability, intentions, history, and targeting, as well as the security environment within which friendly forces operate. Threat analysis is an essential step in identifying probability of terrorist attack and results in a threat assessment. (JP 1-02)

toxic chemical Any chemical which, through its chemical action on life processes, can cause death, temporary incapacitation, or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions or elsewhere. (JP 1-02)

vapor hazard area (VHA) An area in a contaminated payload control area where chemical warfare agent vapor hazards may exist.

vulnerability 1. The susceptibility of a nation or military force to any action by any means through which its war potential or combat effectiveness may be reduced or its will to fight diminished. 2. The characteristics of a system that cause it to suffer a definite degradation (incapability to perform the designated mission) as a result of

having been subjected to a certain level of effects in an unnatural (manmade) hostile environment. 3. In information operations, a weakness in information system security design, procedures, implementation, or internal controls that could be exploited to gain unauthorized access to information or an information system. (JP 1-02)

vulnerability assessment A Department of Defense, command, or unit-level evaluation (assessment) to determine the vulnerability of a terrorist attack against an installation, unit, exercise, port, ship, residence, facility, or other site. Identifies areas of improvement to withstand, mitigate, or deter acts of violence or terrorism. Also called VA. (JP 1-02)

weapons of mass destruction Weapons that are capable of a high order of destruction and/ or of being used in such a manner as to destroy large numbers of people. Weapons of mass destruction can be high explosives or nuclear, biological, chemical, and radiological weapons, but exclude the means of transporting or propelling the weapon where such means is a separable and divisible part of the weapon. Also called WMD. (JP 1-02)

weathering The natural evaporation and decomposition of chemical compounds that occurs over time. Sunlight, high temperature, wind, and moisture aid the weathering process.

weathering zone An area located within the decontamination zone for effecting the process of making any person or object safe by natural neutralization processes and/or making harmless all contamination from payloads prior to aircraft loading.

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